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## DISTRIBUTION OF HEALTH SERVICES IN THE STRUCTURE OF STATE GOVERNMENT \*

### CHAPTER IV. VENEREAL DISEASE CONTROL BY STATE AGENCIES

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State activities for venereal disease control, probably more than for any other health problem covered in a study made by the United States Public Health Service during the year 1940, are characterized by expansion over the past decade. This statement is based on the survey of facilities and services as they existed in 1940 in the structure of State government, contrasted with the situation in 1930, when the second edition of Public Health Bulletin No. 184<sup>1</sup> was compiled. The third edition, of which this is a chapter, differs from those which preceded it in that this is a review of health resources in every branch of State government, whereas the others took into account facilities of the State health department only. When reading this, as well as other chapters of the 1940 revision of Public Health Bulletin No. 184, it must be borne in mind that the services and facilities described are those operated by departments of the State government; those operated by voluntary and local agencies do not appear in the picture.

\* From the States Relations Division. This is the fourth chapter of the third edition of Public Health Bulletin No. 184. Previous chapters are:

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government. Chapter I. The composite pattern of State health services. Public Health Rep., 56: 1673 (August 22, 1941). Reprint 2306.

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government. Chapter II. Communicable disease control by State agencies. Public Health Rep., 56: 2233 (November 21, 1941). Reprint 2334.

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government. Chapter III. Tuberculosis control by State agencies. Public Health Rep., 57: 65 (January 16, 1942). Reprint 2348.

Succeeding chapters will be published in subsequent issues of the Public Health Reports.

<sup>1</sup> Ferrell, John A., Smillie, Wilson G., Covington, Platt W., and Mead, Pauline A.; International Division of the Rockefeller Foundation for the Conference of State and Provincial Health Authorities of North America: Health Departments of States and Provinces of the United States and Canada. Public Health Bulletin No. 184 (Revised). United States Government Printing Office, Washington, 1932.

While it is true that the venereal diseases have long been recognized as an outstanding public health problem by specialists in this field, there has been marked acceleration of effort for venereal disease control during the past ten years. Extension of State service for prevention and cure of the venereal diseases is a natural outgrowth of the relatively recent publicity accorded the magnitude of the problem and of the changed concept of public responsibility in matters involving community and personal health. Provision, at public expense, of diagnostic and therapeutic service for the individual characterizes practically all State programs and stems from the recognition that cure of these diseases is the most effective method of preventing spread of infection. Theoretically, State programs are designed to include control measures for the entire group of the venereal diseases: syphilis, gonorrhea, chancroid, granuloma venereum, and lymphogranuloma inguinale. In actual practice, however, the so-called venereal disease programs as organized during the year covered by this study (1940) were largely restricted to activities for syphilis control, with only minor consideration for the problem of gonorrhea and the remaining illnesses of this classification. Consequently, in the discussion which follows, "venereal disease control" represents, for the most part, "syphilis control."

The current status of State participation in such programs may be described by the extent to which the several agencies of State government engage in one or more of six different types of activity, namely, promulgation and/or enforcement of State laws, rules, and regulations for venereal disease control; promotion of local programs of control; participation in educational programs for venereal disease control; provision of supervisory and/or consultatory service to local health organizations; distribution and/or administration of financial grants-in-aid to local health units for venereal disease control; and operation of a direct service program. By design, this inquiry, as noted previously, is limited to a description of resources and efforts of State agencies; it does not cover corresponding information for comparable agencies operating below the State level.

Inasmuch as the survey herein reported was limited to activities of official departments, boards, commissions, and institutions of State government, this report would not normally embody any discussion of the activities of Federal agencies in relation to venereal disease control. Nevertheless, in order that the State programs may be more clearly understood, it should be said at the outset that all State<sup>2</sup> provisions for venereal disease control have been immeasurably influenced by Federal leadership. The foundation for the present venereal disease control program was laid during the first World War.

<sup>2</sup> The term "State" as used in the discussion which follows includes the States, the Territories, the District of Columbia, and the Virgin Islands.

This came about largely as a result of stimulation by the United States Interdepartmental Social Hygiene Board and funds made available by Congress under the provisions of the Chamberlain-Kahn Act. The appropriation was not sustained and interest in venereal disease control languished following the cessation of hostilities. Funds from the Federal government again were made available following the

TABLE 1.—Official State agencies participating in the venereal disease programs of each State and Territory, the District of Columbia, and the Virgin Islands\*

State or Territory	Department of State government					
	Health	Welfare, social security, or public assistance	Agriculture	Education	State university or college	Independent State hospital or laboratory
Alabama.....	x					
Arizona.....	x					
Arkansas.....	x				x	
California.....	x					
Colorado.....	x				x	
Connecticut.....	x					x
Delaware.....	x					
District of Columbia.....	x					x
Florida.....	x			x		x
Georgia.....	x					
Idaho.....	x					
Illinois.....	x					
Indiana.....	x			x	x	
Iowa.....	x				x	
Kansas.....	x					
Kentucky.....	x					
Louisiana.....	x					x
Maine.....	x					
Maryland.....	x					
Massachusetts.....	x					
Michigan.....	x		x			
Minnesota.....	x				x	
Mississippi.....	x					
Missouri.....	x					
Montana.....	x					
Nebraska.....	x					
Nevada.....	x					
New Hampshire.....	x					
New Jersey.....	x					
New Mexico.....	x					
New York.....	x					
North Carolina.....	x					
North Dakota.....	x					
Ohio.....	x				x	x
Oklahoma.....	x					
Oregon.....	x					
Pennsylvania.....	x					
Rhode Island.....	x					
South Carolina.....	x					
South Dakota.....	x					
Tennessee.....	x		x	x		x
Texas.....	x					
Utah.....	x					
Vermont.....	x					
Virginia.....	x				b x	
Washington.....	x	x				
West Virginia.....	x	x				x
Wisconsin.....	x	x				x
Wyoming.....	x		x			
Alaska.....	x					
Hawaii.....	x					
Puerto Rico.....	x					
Virgin Islands.....	x					

\*Any differences between information presented in this table and corresponding entries in table 1, ch. 1, of this series are the result of further refinement of the data since publication of the initial article.

• The department of health is really a division (Idaho) and bureau (Maine) of public health, subordinate to the department of welfare (Idaho) and the department of health and welfare (Maine).

b Two agencies of this classification.

passage of the Social Security Act in 1935. The program was given further impetus under the more generous provisions of the Venereal Disease Control Act of 1938, which is an amendment to the original Act of 1918. According to the 1938 statute, eligibility of a State for Federal aid is dependent upon its meeting certain standards of operation; thus, in addition to being strengthened through financial assistance, State programs for venereal disease control have many common characteristics. Despite the influences that tend toward standardization, a high degree of individuality still obtains as may be determined from the discussion and tables that follow.

#### VARIATION IN PROCEDURES FOR VENEREAL DISEASE CONTROL

Major responsibility for venereal disease control has been delegated to the health department in every State. As a matter of fact, in two-thirds of the jurisdictions it is the sole agency of State government concerned with this problem. Table 1 demonstrates the outstanding position of the health department in the venereal disease control scene and it also identifies other agencies which, with varying frequency, supplement health department activities in certain States. In several areas, it will be noted, the main program is augmented by services of more than one additional agency. State universities or colleges are more apt to function collaterally with the health department than is any other type of agency, though departments of welfare, agriculture, and education, independent hospitals, and independent laboratories occasionally participate. Contributions of governmental units other than health departments are subsidiary in character when considered in terms of the aggregate State plan. Particularly is this true of the services offered by agencies grouped under the heading "Other," which includes a board of control, board of commissioners, department of conservation, State fire marshal, dairy and food commission, and hotel commission, each confined to a single State. The general content of the program of each State may be determined from table 2.

Since State activities for venereal disease control are primarily limited to the health department, variations among the several jurisdictions are chiefly, though not entirely, attributable to differences in health department practices rather than to dissimilarity in the distribution of responsibility. Table 2 discloses the extent of these variations and, concomitantly, of the uniformity which exists. The code system used in the table is explained at the end thereof.



TABLE 2.—Department of State government\* responsible for specific activities designed to control venereal diseases in each State and Territory, the District of Columbia, and the Virgin Islands

Activity	State or Territory							
	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia Florida
Promulgates and/or enforces State laws, rules, and regulations for venereal disease control.	1	1	1	1	1	1, 7	1	1, 7
Promotes local programs of control.	1	1	1	1	1	1	1	1
Conducts educational programs in venereal disease control for:								
The general public.	1	1	1	1	1	1	1	1
School groups.	1	1	1	1	1	1	1	1
Private physicians.	1	1	1	1	1	1	1	1
Health department personnel.	1	1	1	1	1	1	1	1
Other special groups.				1	1			
Supervises and/or provides consultation service to local organizations.	1	1	1	1	1	1	1	1
Distributes and/or administers grants-in-aid to local health units for venereal disease control.	1	1	1	1	1	1	1	1
Operates a direct service program:								
Collects and analyzes reports of venereal diseases.	1	1	1	1	1	1	1	1
Conducts special studies to determine the prevalence of syphilis in the State.				1	1	1	1	1
Furnishes free drugs—								
Neosarsphenamine.	1	1	1	1	1	1	1	1
Arsphenamine.	1	1	1	1	1	1	1	1
Other arsenicals.	1	1	1	1	1	1	1	1
Mercury.	1	1	1	1	1	1	1	1
Bismuth.	1	1	1	1	1	1	1	1
Iodides.	1	1	1	1	1	1	1	1
Sulfonamides.	1	1	1	1	1	1	1	1
Other.	1	1	1	1	1	1	1	1
Distributes free drugs for—								
All reported cases.	1	1		1	1		1	1
Clinic patients and indigent patients treated by private physicians.			1					
Clinic patients only.						1		
Provides free diagnostic laboratory service.	1	6	1	1	1	1	1	1
Operates or directly finances clinics.				1	1	1	1	1
Finances treatment of patients by private physicians in their offices.		1		1	1	1	1	
Makes field investigations (follow-up and case-finding services) of—								
All delinquent cases.							1	
Infectious delinquent cases.						1		
Other selected cases.	1	1		1	1	1	1	1
Contacts.	1	1		1	1	1	1	1
Provides free hospitalization for venereal disease patients.			5	1	5			1
Renders other services not included in this classification.	1				1		1	1, 4

See footnotes at end of table.

**TABLE 2.**—*Department of State government responsible for specific activities designed to control venereal diseases in each State and Territory, the District of Columbia, and the Virgin Islands—Continued*

Activity	State or Territory								
	Georgia	Idaho *	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine *
Promulgates and/or enforces State laws, rules, and regulations for venereal disease control...	1	1	1	1	1	1	1	1, b 6	1
Promotes local programs of control...	1	1	1	1	1	1	1	1	1
Conducts educational programs in venereal disease control for:									
The general public.....	1	1	1	1, 4	1	1	1	1	1
School groups.....				1, 4	1	1	1		1
Private physicians.....	1	1	1	1	1	1	1	1	1
Health department personnel.....	1	1	1	1	1	1	1	1	1
Other special groups.....	1		1		1			1	
Supervises and/or provides consultation service to local organizations.....	1	1	1	1	1	1	1	1	1
Distributes and/or administers grants-in-aid to local health units for venereal disease control.....	1	1	1	1	1	1	1	1	
Operates a direct service program:									
Collects and analyzes reports of venereal diseases.....	1	1	1	1	1	1	1	1	1
Conducts special studies to determine the prevalence of syphilis in the State.....	1	1	1	1	1				
Furnishes free drugs—									
Nearsphenamine.....	1	1	1	1	1	1	1	1	1
Arsphenamine.....		1			1		1		
Other arsenicals.....	1	1	1	1	1	1	1	1	1
Mercury.....		1	1				1		1
Bismuth.....	1	1	1	1	1	1	1	1	1
Iodides.....			1						1
Sulfonamides.....	1				1	1	1		1
Other.....					1				
Distributes free drugs for—									
All reported cases.....	1	1	1	1	1		1	1	1
Clinic patients and indigent patients treated by private physicians.....						1			
Clinic patients only.....									
Provides free diagnostic laboratory service. Operates or directly finances clinics.....	1	1	1	1	1	1	1	1	1
Finances treatment of patients by private physicians in their offices.....	1	1	1		1			b 6	1
Makes field investigations (follow-up and case-finding services) of—									
All delinquent cases.....			1						1
Infectious delinquent cases.....			1	1	1				
Other selected cases.....			1		1				
Contacts.....			1	1	1				1
Provides free hospitalization for venereal disease patients.....				1 5	1, 5			1 b 6	1
Renders other services not included in this classification.....	1	1	1	1	1		1	1	1

See footnotes at end of table.

TABLE 2.—Department of State government responsible for specific activities designed to control venereal diseases in each State and Territory, the District of Columbia, and the Virgin Islands—Continued

Activity	State or Territory							
	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nevada
Promulgates and/or enforces State laws, rules, and regulations for venereal disease control	1	1	1, 3	1, 5	1	1	1	1
Promotes local programs of control	1	1	1	1	1	1	1	1
Conducts educational programs in venereal disease control for:								
The general public	1	1	1	1	1	1	1	1
School groups			1	1	1	1	1	1
Private physicians	1	1	1	1	1	1	1	1
Health department personnel	1		1	1	1	1	1	
Other special groups			1					
Supervises and/or provides consultation service to local organizations	1	1	1	1	1	1	1	1
Distributes and/or administers grants-in-aid to local health units for venereal disease control	1	1	1	1	1	1	1	
Operates a direct service program:								
Collects and analyzes reports of venereal diseases	1	1	1	1	1	1	1	1
Conducts special studies to determine the prevalence of syphilis in the State	1		1	1	1	1		
Furnishes free drugs—								
Neosarsphenamine	1	1	1	1	1	1	1	1
Arsphenamine		1	1					
Other arsenicals	1	1	1	1	1		1	1
Mercury				1			1	1
Bismuth	1	1	1	1	1	1	1	1
Iodides							1	
Sulfonamides	1		1	1	1	1		1
Other			1					1
Distributes free drugs for—								
All reported cases	1	1	1	1	1	1	1	1
Clinic patients and indigent patients treated by private physicians								1
Clinic patients only								
Provides free diagnostic laboratory service	1	1	1	1	1	1	1	1
Operates or directly finances clinics				1, 5		1		1, 5
Finances treatment of patients by private physicians in their offices	1	1					1	
Makes field investigations (follow-up and case-finding services) of—								
All delinquent cases						1		
Infectious delinquent cases				1				1
Other selected cases		1	1	1		1		1
Contacts		1	1			1	1	1
Provides free hospitalization for venereal disease patients		1		1, 5				
Renders other services not included in this classification	1					1	1	1

See footnotes at end of table.

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TABLE 2.—Department of State government responsible for specific activities designed to control venereal diseases in each State and Territory, the District of Columbia, and the Virgin Islands—Continued

Activity	State or Territory							
	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma
Promulgates and/or enforces State laws, rules, and regulations for venereal disease control.	1	1	1	1	1	1	1, 5, 7	1
Promotes local programs of control.	1	1	1	1	1	1	1	1
Conducts educational programs in venereal disease control for:								
The general public.	1	1	1	1	1	1	1	1
School groups.	1	1	1	1	1	1	1	1
Private physicians.	1	1	1	1	1	1	1	1
Health department personnel.	1	1	1	1	1	1	1	1
Other special groups.		1	1		1			1
Supervises and/or provides consultation service to local organizations.	1	1	1	1	1	1	1	1
Distributes and/or administers grants-in-aid to local health units for venereal disease control.		1	1	1	1	1	1	1
Operates a direct service program:								
Collects and analyzes reports of venereal diseases.	1	1	1	1	1	1	1	1
Conducts special studies to determine the prevalence of syphilis in the State.	1	1				1	1	1
Furnishes free drugs—								
Neosphenamine.	1	1	1	1	1	1	1	1
Arsphenamine.			1	1	1			
Other arsenicals.	1	1	1	1	1	1	1	1
Mercury.		1	1	1	1	1	1	1
Bismuth.	1	1	1	1	1	1	1	1
Iodides.	1							
Sulfonamides.	1	1	1	1	1			1
Other.			1			1		
Distributes free drugs for—								
All reported cases.	1		1	1	1	1		1
Clinic patients and indigent patients treated by private physicians.		1					1	
Clinic patients only.								
Provides free diagnostic laboratory service.	1	1	1	1	1	1	1	1
Operates or directly finances clinics.	1	1					5	1
Finances treatment of patients by private physicians in their offices.	1		1	1		1	1	
Makes field investigations (follow-up and case-finding services) of—								
All delinquent cases.	1							1
Infectious delinquent cases.	1	1		1		1		
Other selected cases.	1	1			1			
Contacts.	1	1		1		1		1
Provides free hospitalization for venereal disease patients.	1					1		
Renders other services not included in this classification.		1		1	1			1

See footnotes at end of table.

**TABLE 2.**—*Department of State government responsible for specific activities designed to control venereal diseases in each State and Territory, the District of Columbia, and the Virgin Islands—Continued*

Activity	State or Territory								
	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia
Promulgates and/or enforces State laws, rules, and regulations for venereal disease control.	1	1	1	1	1, 3, 7	1	1	1	1, b 5
Promotes local programs of control.	1	1	1	1	1	1	1	1	1
Conducts educational programs in venereal disease control for:									
The general public.	1	1	1	1	1	1	1	1	1
School groups.	1		1	1	1, 4	1	1	1	1
Private physicians.	1	1	1	1	1	1	1	1	1
Health department personnel.	1	1	1	1	1	1	1	1	1
Other special groups.									
Supervises and/or provides consultation service to local organizations.	1	1	1	1	1	1	1	1	1
Distributes and/or administers grants-in-aid to local health units for venereal disease control.	1		1		1	1			1
Operates a direct service program:									
Collects and analyzes reports of venereal diseases.	1	1	1	1	1	1	1	1	1
Conducts special studies to determine the prevalence of syphilis in the State.		1	1		1				1, 5
Furnishes free drugs—									
Neosarsphenamine.	1	1	1	1	1	1	1	1	1
Arsphenamine.	1								1
Other arsenicals.	1	1	1	1	1	1	1	1	1
Mercury.	1		1					1	
Bismuth.	1	1	1	1	1	1	1	1	1
Iodides.								1	
Sulfonamides.	1	1	1	1		1	1	1	
Other.									
Distributes free drugs for—									
All reported cases.		1	1	1	1		1	1	1
Clinic patients and indigent patients treated by private physicians.	1					1			
Clinic patients only.									
Provides free diagnostic laboratory service.	1	1	1	1	1	1	1	1	1, b 5
Operates or directly finances clinics.	1	1	1		1		1	1	b 5
Finances treatment of patients by private physicians in their offices.		1		1				1	
Makes field investigations (follow-up and case-finding services) of—									
All delinquent cases.	1	1					1	1	
Infectious delinquent cases.		1							
Other selected cases.			1						1
Contacts.	1	1	1		1		1	1	1
Provides free hospitalization for venereal disease patients.				1					
Renders other services not included in this classification.	1		1				1		b 5

See footnotes at end of table.



TABLE 2.—Department of State government responsible for specific activities designed to control venereal diseases in each State and Territory, the District of Columbia, and the Virgin Islands—Continued

Activity	State or Territory						
	Washington	West Virginia	Wisconsin	Wyoming	Alaska	Hawaii	Puerto Rico Virgin Islands
Promulgates and/or enforces State laws, rules, and regulations for venereal disease control.....	1, 2	1	1, 2	1, 3	1	1	1
Promotes local programs of control.....	1	1	1	1	1	1	1
Conducts educational programs in venereal disease control for:							
The general public.....	1	1	1	1	1	1	1
School groups.....	1	1	1	1	1	1	1
Private physicians.....	1	1	1	1	1	1	1
Health department personnel.....	1	1	1	1	1	1	1
Other special groups.....	1	1	1	1	1	1	1
Supervises and/or provides consultation service to local organizations.....	1	1	1	1	1	1	1
Distributes and/or administers grants-in-aid to local health units for venereal disease control.....	1	1, 2	1	1	1	1	1
Operates a direct service program:							
Collects and analyzes reports of venereal diseases.....	1	1	1	1	1	1	1
Conducts special studies to determine the prevalence of syphilis in the State.....	1	1	1	1	1	1	1
Furnishes free drugs:							
Neosarsphenamine.....	1	1	1	1	1	1	1
Arsphenamine.....	1	1	1	1	1	1	1
Other arsenicals.....	1	1	1	1	1	1	1
Mercury.....	1	1	1	1	1	1	1
Bismuth.....	1	1	1	1	1	1	1
Iodides.....	1	1	1	1	1	1	1
Sulfonamides.....	1	1	1	1	1	1	1
Other.....	1	1	1	1	1	1	1
Distributes free drugs for—							
All reported cases.....	1	1	1	1	1	1	1
Clinic patients and indigent patients treated by private physicians.....	1	1	1	1	1	1	1
Clinic patients only.....	1	1	1	1	1	1	1
Provides free diagnostic laboratory service.....	1	1	1	1	1	1	1
Operates or directly finances clinics.....	1	1	1	1	1	1	1
Finances treatment of patients by private physicians in their offices.....	1	1	1	1	1	1	1
Makes field investigations (follow-up and case-finding services) of—							
All delinquent cases.....	1	1	1	1	1	1	1
Infectious delinquent cases.....	1	1	1	1	1	1	1
Other selected cases.....	1	1	1	1	1	1	1
Contacts.....	1	1	1	1	1	1	1
Provides free hospitalization for venereal disease patients.....	1, 2	7	1	1	1	1	1
Renders other services not included in this classification.....	1	1	1	1	1	1	1

## \*Code:

1. Health department
  2. Department of welfare, social security, or public assistance
  3. Department of agriculture
  4. Department of education
  5. State university or college
  6. Independent State hospital or laboratory
  7. Other departments of State government
- a The department of health is really a division (Idaho) and bureau (Maine) of public health, subordinate to the department of welfare (Idaho), and the department of health and welfare (Maine).  
 b Two agencies of this classification function in this manner.  
 c Function of the official agency is cooperation with a voluntary agency which initiates the work.  
 d Of syphilis only. Gonorrhea not reportable.  
 e Syphilis reports limited to acute communicable cases.  
 f Upon request.  
 g If case is infectious.  
 h If patient is treated as a municipal patient the municipality provides the necessary drugs. Nevertheless, if in the judgment of the chief municipal physician the patient is able to pay for treatment, he is subsequently billed for the services.  
 i For selected cases, selected areas, or under other special conditions.  
 j As part of the State's program of general hospital care for the needy.  
 k Three agencies of this classification function in this manner.

The function of law enforcement is perhaps a more prominent feature of venereal disease control than of many public health programs. Every State health department exercises some sort of regulatory authority designed to prevent the spread of venereal disease, but the scope of such authority varies among the States. Without exception it includes promulgation and enforcement of rules and regulations concerning the reporting of venereal diseases and the establishment of standards of eligibility for services provided at State expense.

In a number of jurisdictions, regulatory functions of the State agency extend to administration of laws requiring compulsory examination of selected population groups for the purpose of determining their freedom from infectious venereal disease. Premarital examination laws are probably the best known of this type. By 1940, 24 States had enacted legislation requiring premarital health examinations, including a blood test for syphilis. These States are: Alabama, California, Colorado, Connecticut, Illinois, Indiana, Kentucky, Louisiana, Michigan, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Virginia, West Virginia, Wisconsin, and Wyoming. Twenty of these States require both the bride and groom to be examined, whereas 4, namely Alabama, Louisiana, Texas, and Wyoming, demand examination of the groom only. According to Peckham,<sup>3</sup> 6 additional States (Delaware, Maine, Nebraska, Oklahoma, Utah, and Vermont) prohibit the marriage of persons with venereal disease, even though they make no specification as to examination. At the same time, some of this group do require a personal affidavit as to freedom from infection. Enactment of premarital legislation began over twenty-five years ago. However, because the earlier laws were inadequate, their effectiveness as an approach to control of the venereal disease problem, particularly as it applies to syphilis, was minimized. Recently there has been a revival of interest in the possibilities of premarital legislation, if properly drafted. The first of the newer laws was passed by Connecticut in 1936.

Prenatal laws, which seek to reduce congenital syphilis by insisting that a serologic test be a part of the physical examination of every pregnant woman, were in operation in 19 States in 1940: California, Colorado, Delaware, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Dakota, and Washington.

Persons with an infectious venereal disease are definitely prohibited employment as food handlers in about two-fifths of the States. In about as many more, there are comparable regulations pertaining to

<sup>3</sup> Peckham, Charles H., Jr.: Legal and therapeutic aspects of syphilis and pregnancy. *J. Am. Med. Assoc.*, 117:1863 (November 29, 1941).

employment as food handlers for persons with "any communicable or infectious disease." Whether venereal illnesses are included in this coverage is not specifically stated. Type and frequency of examination required, whether such tests are made routinely or upon suspicion only, and other related circumstances vary widely from State to State. A few States also impose restrictions upon one or more of the following groups: Employees of laundries, swimming-pool attendants, barbers, cosmetologists, nurses, domestic servants, and school teachers, janitors, bus drivers, and pupils.

Although the health department may have complete regulatory jurisdiction, in practice it frequently delegates enforcement power to local health officers who serve as agents of the State organization. In several States, responsibility is split between the health department and the department of welfare, State university or college, or an independent State hospital. Where this situation exists, however, the regulatory participation of the latter agencies does not extend to general law enforcement but is limited to defining the terms under which their services are made available to the public. Functions of the several departments of agriculture and of the dairy and food commission, hotel commission, State fire marshal, and department of conservation, which share regulatory powers in one State each, pertain to the employment of food handlers with venereal disease.

Enforcing treatment of infectious cases and quarantining recalcitrant patients are other regulatory measures which most State health departments are authorized to enforce. By one device or another attempts are made either to suppress or regulate prostitution—a practice which is recognized as the most prolific source of venereal diseases—and its repression is regarded as a public health measure. It is a common policy for State health departments to empower local health officers to examine, at their discretion, any person reasonably suspected of having a venereal disease in communicable form. Prostitutes and their associates are automatically included in this classification. Consequently, such persons are subject to examination to determine whether or not they are infected with communicable syphilis or gonorrhea. Those found to be so afflicted are required to submit to treatment until discharged and to observe any precautions required by the health authorities against transmission of infection. In the event that treatment is discontinued prematurely or that there is failure to cooperate in any other way, the State further empowers the local health officer to establish isolation or quarantine, under which conditions treatment is enforced. Noncooperative offenders of this type may be committed to county isolation hospitals, detention wards in county jails, State industrial schools for girls, or State detention homes or quarantine hospitals for women. About half of the States specifically charge representatives of the health depart-

ment to assist in every way the proper officials whose duty it is to enforce laws directed against prostitution.

Conceding that the attack upon venereal disease must be carried on at close range to be effective, health departments with varying degrees of activity engage in promotion of local programs of control. Whenever possible, the State agency operates through full-time local health units. However, it does not limit its promotional activities to areas having organized general health service. In the absence of official health facilities at the local level, the State agency stimulates local service through different types of voluntary agencies such as hospitals, medical societies, or public-spirited lay groups.

Closely integrated with—in fact, largely contributory to—the promotional function of the State organization, are the educational programs which it sponsors. Educational pursuits are planned for the benefit of both lay and professional groups by the health departments of practically all States. Notwithstanding, the types of educational work engaged in vary considerably. Distribution of literature—pamphlets, books, reprints, and the like—and lectures by staff members to representative clubs and organizations such as men's luncheon and service clubs, mothers' clubs, Y. M. C. A. and Y. W. C. A. members, and parent-teacher associations constitute the most common methods of acquainting the general public with facts regarding the prevalence of venereal diseases and possibilities for their control. Frequently the lectures are accompanied by amplifying films, slides, or exhibits. About half of the States extend their educational efforts beyond these organized community groups and approach the general public through the home, magazine and newspaper articles and/or radio programs being the chosen educational medium.

About four-fifths of the States adapt certain features of their educational undertakings to the curricula of high schools and teachers' colleges. In some instances, the State agency carries its instructional program into the schools only upon request of the local community; in others, one or more special educators are employed for routine instruction of high school and college youths in the various aspects of venereal disease control. Except in two States, these school programs are sponsored by the health department exclusively. In Indiana and Tennessee there are cooperative arrangements between the departments of health and education for inclusion of venereal disease control as a subject for consideration in the general health education of high school students. Educational projects cover both the preventive and curative aspects of venereal diseases.

State provisions for keeping private physicians currently informed on the latest developments in diagnosis and treatment of the venereal diseases range from distribution of literature, presentation of films, exhibits, and lectures before county medical societies, and occasional

private consultations, to the arranging and financing of formal refresher or post-graduate courses for them. Only about one-third of the States include the latter item in their plan for professional education, and even then both length and intensity of the courses vary considerably.

A very fertile field for activity of the State agency charged with venereal disease control lies in affording supervision and consultation to organizations operating direct service programs at the local level. All but two health departments function in this capacity; these are the Virgin Islands and the District of Columbia which do not represent true State organizations. Supervisory and consultatory aid extends to both the administrative and clinical phases of the problem, including suggestions for organizing and operating clinics and advice concerning follow-up measures as well as recommendations regarding diagnosis and treatment. Staff members of the State health departments offer advisory service to both official and nonofficial organizations. Their supervisory function, on the other hand, is largely confined to the venereal disease control activities of organized local health units or of facilities operating under other auspices which have been granted State aid. State supervision of local practices implies some measure of uniformity of procedures within a given State; yet closeness of supervision varies from one jurisdiction to another. To a considerable degree it is determined by the extent of State financial participation in services offered locally. In some instances, supervisory authority of the parent agency goes so far as to prescribe the course of treatment to be followed by its local subdivisions; in others, it is concerned merely with checking upon local observance of State regulations pertaining to submission of reports, eligibility of clients for service, and the like.

Reference to table 2 discloses that in contradistinction to actual State operation of services for local areas, three-fourths of the State health departments stimulate the venereal disease programs of local health organizations by extending financial aid. The funds allocated by State agencies to local units only partially represent State-appropriated moneys, of course, for the States have previously received a sizable portion of these grants from the United States Public Health Service and occasionally from private foundations or other voluntary organizations. Nevertheless, decision upon the method of expending available money rests with the State agency. Several varying plans or combinations thereof may be followed: Sometimes the total sum is administered directly by the parent body; again it is allotted to the subsidiary organizations for the purchase of actual service; in still other instances, it is used for drugs and supplies and these, in turn, are distributed to the local jurisdictions. The fact that 75 percent of the States make it a policy to distribute funds or drugs to local units



points to the current trend of thought in this matter. Obviously, by the device of subventions in the form of funds or supplies, States are encouraging provision of service at the local level—where the problem actually exists.

Purposes for which State grants to local health units are utilized, either separately or in combination, include nursing service for case-finding, clinic assistance, and follow-up work; diagnostic laboratory service; epidemiological investigations; and clinic facilities. Payment of clinicians' fees and provision of drugs used for treatment represent the specific items of local clinic expense which are most often supported by State subsidy. However, State grants are sometimes applied to the general operating expenses of local clinics. Inasmuch as this study was focused upon function of the respective State agencies rather than upon the volume of service which they render, no definite comparisons are made of the spread of State subsidy for local venereal disease activities. Whereas one State health department aids only one or two local clinics, another financially participates in the operation of many. Likewise, the number of nurses and laboratory technicians employed by local health units as a result of State allotments varies considerably. In other words, State subsidy is not traced to its ultimate application by the local health units, for such analysis would involve detailed description of activities at the local level. As previously mentioned, the survey was limited to facilities and services of State agencies only. It is understood, of course, that State subsidy of any particular local activity for venereal disease control does not preclude the State agency from providing the same kind of service directly at the State level in some other portion of the jurisdiction. Such a situation may or may not exist.

About two-fifths of the health departments depend upon the collection and analysis of routine reports from private physicians and local health officers to measure the incidence of the venereal diseases within the boundaries of their several States. Unfortunately, however, reporting is not always complete. Acknowledging this, the remaining 32 health departments conduct special surveys to obtain further information regarding the prevalence of syphilis. The fact that these special studies are largely limited to determination of the presence of syphilis rather than extended to include all venereal diseases is in complete accord with the general organization of the State venereal disease control programs. As stated earlier in this report, syphilis control measures are the essential components of these programs. Mass serologic testing of selected population groups—college students, inmates of county homes and State hospitals, W. P. A. workers, N. Y. A. applicants, and employees of various industries; random blood testing in stations set up at State and county

fairs; and statistical analysis of positive cases discovered by routine premarital, prenatal, and food-handler Wassermann tests are the most frequently employed case-finding techniques. The results obtained, when applied to the total population, serve the dual purpose of checking thoroughness of physician-reporting and providing additional detailed information regarding the rate and distribution of syphilis infection.

An essential element of syphilis case-finding activities is the availability of laboratory facilities for testing the blood samples collected. Although characteristic clinical symptoms manifest themselves, diagnosis cannot be regarded as complete or accurate without laboratory confirmation of the physical findings. It is obvious, therefore, that provision of free diagnostic laboratory service is an integral part, and one of the first considerations, of every syphilis control program. Without exception, some agency of State government, usually the health department, has accepted this responsibility. A few States have separate serology laboratories, but in most of them the work is done by the general public health laboratory. The diagnostic service rendered thereby is available to private physicians, clinicians, local health officers, and hospitals on much the same basis as laboratory service provided for the diagnosis of other communicable diseases. In most States, serologic service is afforded without restriction as to the patient's economic status. It should be stated at this point that laboratory facilities for venereal disease control, unlike certain other phases of the programs, are not confined to diagnosis of syphilis alone. While it is true that Wassermann, Kahn, and other tests for syphilis represent the major volume of laboratory service for venereal disease control, application of standard techniques for diagnosis of gonorrhea also constitutes an appreciable portion of the total volume of laboratory service. An additional related activity of many State public health laboratories is checking and approving the diagnostic procedures of private laboratories.

Inasmuch as control of venereal disease is largely contingent upon the cure of infected persons, State health departments without exception have undertaken to supply, free of charge, certain drugs essential to effecting such cure. The conditions under which these drugs are distributed vary. Whereas over three-fourths of the States make reporting of the case the only conditional factor in furnishing the required drugs, in the remaining jurisdictions State-supplied medicines are available to physicians for indigents only. Patients treated at public expense are included in the indigent groups, of course. The kinds of drugs offered by the several States include: neoarsphenamine, arsphenamine, acetarsone, tryparsamide, sulfarsphenamine, mapharsen, bimarsen, stovarsol, mercury, bismuth, iodides, and sulfonamides. From table 2 may be determined the relative frequency

of their distribution by groups during 1940. Most of the drugs listed are provided for the treatment of syphilis; however, the sulfonamides—which are supplied by about three-fourths of the States, but for a relatively small number of patients—are used in the treatment of gonorrhea. With discovery of the curative properties of sulfonamide compounds, State agencies are now actively laying plans to expand facilities for gonorrhea control to match those for syphilis control.

Because of the peculiar nature of syphilis infection, the actual treatment process extends over a long period of time and requires the service of a physician for administration. Consequently, provision of free drugs is only the first requisite for initiating treatment of syphilis patients who would not ordinarily seek medical care. Some arrangement with a physician for free administration of these drugs at regular intervals is equally as important if the patient is to be truly benefited. As a result, one of the most notable features of current programs is the provision, at State expense, of treatment facilities.

Clinics, affording both diagnostic and treatment services, have been chosen as the most practical arrangement for handling large numbers of patients. As mentioned earlier in the report, approximately three-fourths of the States foster clinic service by financially aiding local health units, which, in turn, are charged with all details of operation. The remaining States follow other policies for making treatment facilities available to venereal disease patients eligible for public care. Under one plan, the State agency is entirely responsible for all aspects of maintaining the clinic stations. Under another, clinics are organized and operated by local physicians, but the State agency compensates these clinicians directly, instead of indirectly through local health departments. As a matter of fact, the latter arrangement is not apt to prevail in areas which do not have organized local health services. Twenty-five State health departments, 5 State university or college hospitals, and 2 independent State general hospitals either operate or directly finance clinic facilities for diagnosis and treatment of venereal disease. Stationary clinics predominate when a State agency is the clinic sponsor. At the same time, several State health departments operate mobile treatment units. These clinic staffs, with their equipment and supplies, travel from point to point throughout designated portions of the State at regular intervals, administering treatment at each scheduled stop. Under this plan the complete clinic set-up is motorized. In a few other States, the direct service arrangement which exists may be described as maintenance of fixed clinics at permanent locations with clinicians attached to the central staff of the State agency making periodic visits to each in circuit rider fashion. Over half of the 25 health departments which furnish direct clinic service according to one of these plans also subsidize clinics operated by local health agencies. Approximately 90

percent of the persons served in these clinics have syphilis, while the remaining 10 percent are gonorrhea patients.

In only two jurisdictions is there complete lack of State participation in the provision of organized clinic facilities for the treatment of venereal disease. Even in these places, the State assumes some responsibility for treatment of the indigent. Here it is the policy of the health department to pay private physicians on a case or treatment basis for all medically indigent patients served in their offices. The practice of financing treatments given by private physicians in their offices is not confined to States which do not have clinic services. Indeed, nearly half of the health departments include this item among their measures for venereal disease control in communities without organized clinic facilities.

Thus it is seen that there are several schemes for offering, partly or wholly at State expense, treatment to venereal disease patients, and that one or all methods may be employed by a single State. It should be emphasized, of course, that there is marked diversity among the States in the spread and volume of such services. One clinic or over one hundred may be operated by the State agency under discussion; furthermore, there is no common pattern either in the patient load per clinic session or in the interval at which clinic sessions are held. Presumably, the extent of service offered directly by the State agency is influenced, at least partially, by complementary services provided at the local level. However, source material collected in connection with this survey did not reveal the exact weight of this component.

Reference to the previous edition of Public Health Bulletin No. 184<sup>4</sup> reveals that there has been conspicuous growth since 1930 in State provision of treatment facilities for venereal disease. At that time, only 33 of the 48 States (information was not included for the District of Columbia, the Territories, and the Virgin Islands) furnished free treatments to indigents. In 1940, as previously stated, all jurisdictions operated some plan whereby such service was made available, either partly or wholly at State expense. Further evidence of expansion is found in the increased volume of health department service which now operates exclusively for venereal disease control. In 1930, 21 State health departments had special units of venereal disease control; the venereal disease programs of 20 States were associated with other health department activities; and 7 health departments engaged in no venereal disease activities whatever. In 1940, on the other hand, 36 health departments reported a special bureau, division, or section devoted to venereal disease work, while the remainder operated for this purpose through other branches of the organization.

Operation of prophylaxis stations is not reported as an activity of State agencies. However, one State health department is specifically

<sup>4</sup> See footnote 1

empowered to establish and support such stations when deemed necessary; two supply free prophylactic chemicals upon request; and another provides mechanical prophylaxis. On the whole, State participation in this phase of venereal disease control is limited to dissemination of printed instructions recommending personal prophylaxis for any person exposing himself to venereal infection. Even this form of service is reported by only seven States.

The epidemiological aspect of venereal disease control is not overlooked in concentrating upon the curative side of the problem, for case-finding also is stimulated through clinic activity. The practice of requesting patients applying for treatment to report suspected sources of infection and subsequent contacts is one method frequently employed for securing information leading to discovery of unknown cases. Persons thus listed who do not voluntarily apply for diagnosis or treatment are then investigated in an effort to have them submit to diagnostic tests for the protection of both themselves and the community. About two-thirds of the State health departments assign personnel to field investigations of venereal disease contacts. Nearly an equal number make certain types of diagnosed cases the focus of field investigation also, but there is little uniformity in the selection of cases to be followed up.

Experience has shown that clinic patients are apt to become irregular in attendance as soon as some improvement in their condition is noted, and long before a complete cure is effected. Consequently, it is a common policy of State health departments to conduct follow-up activities designed to seek continuation of treatment for these delinquent cases. Among those which lapse in clinic attendance, early infectious cases and pregnancies are the types to which State nurses, physicians, or social workers most often make follow-up visits for the purpose of urging continued treatment. In some jurisdictions, however, plan of organization—rather than type of case—is the selective factor governing the follow-up work of State health departments. For instance, a few States provide follow-up service for clinic cases only. Some confine their activities to areas having no corresponding local facilities. Still others restrict field investigations to cases reported by private physicians or even to cases under private treatment which have lapsed in attendance.

As pointed out repeatedly, the purpose of this discussion is to differentiate between the various administrative plans for venereal disease control inasmuch as it was not feasible to assemble data by which to demonstrate inequalities among the several States in extent or intensity of service. Therefore, in one State, the field work described may represent the efforts of a single investigator assigned to a lone county—or even smaller political subdivision—or operating from the central office for follow-up of special request cases only. In



another, it may portray the activities of a staff of several persons operating on a State-wide basis. It is likely, though not certain, that State field services are usually planned to supplement those provided at the local level.

Since hospitalization of venereal disease patients is largely a responsibility of local health jurisdictions, State figures reveal comparatively little on this subject. Only one-fifth of the State health departments include hospital treatment of venereal disease cases as an item in their complete control programs. Even in these States, hospitalization is a service only recently introduced and offered largely on an experimental basis for testing the efficacy of rapid intravenous drip therapy. Hospital facilities are also made available to venereal disease patients by five State university hospitals, three independent State general hospitals, a department of welfare, and a board of control. Admission of paretics and other cases of syphilitic insanity to State mental hospitals is not considered in this service category inasmuch as, under these circumstances, the patient is hospitalized because of his paralytic or mental state and not the venereal infection which preceded it. Neither are commitments to treatment wards of State industrial schools, detention homes, or farms included since the chief object of such facilities is isolation for enforced treatment such as is usually administered in clinics rather than provision of the special bed care or therapeutic devices usually accredited to hospitals.

In the light of data presented, it is obvious that venereal disease control is fundamentally a health department responsibility and that the efforts of all State health departments are aimed, first, toward diagnosis of previously undiscovered cases of venereal disease and, second, toward placing under treatment every case discovered. As to the most feasible methods of achieving these aims, there is still some disagreement. Primarily, State efforts in 1940 were largely concentrated upon the control of syphilis, with only minor attention directed toward the eradication of gonorrhea and other diseases of the venereal category.

#### EXPENDITURES FOR VENEREAL DISEASE CONTROL

Probably the most graphic medium available for measuring the relative efforts of the several States toward controlling their respective venereal disease problems is the financial expenditures which they make for this purpose. Earlier discussions devoted to expenditures for the control of general communicable disease and tuberculosis<sup>5</sup> emphasized the difficulty of arriving at a complete and accurate cost figure for any specific health problem. It was pointed out in these preceding articles that deficiencies in cost data are due largely to the

<sup>5</sup> See text footnote \*.

organizational and functional overlapping and interweaving of State agencies or their subdivisions and to the practice of including different items under like nomenclature in the various States. Therefore, for both general communicable disease and tuberculosis control, expenditures considered were restricted to those based on funds designated specifically for the problem under consideration.

Certain difficulties encountered in determining total expenditures apply to venereal disease control as well as to the other health services referred to. Most States, in addition to allocating established funds to venereal disease control as a separate entity, include some venereal disease activities under other service categories. Serological tests for syphilis constitute a major part of the work of the State diagnostic laboratory; assisting at venereal disease clinics and making home visits for the promotion of clinic attendance represent important duties of the public health nursing staff; training schedules arranged for various public health personnel encompass specialized instruction in venereal disease control; general public health education projects cover the field of venereal disease; and in most places some part of the venereal disease program is carried by the general framework of State and local health organization. From combined sources, it is impossible to determine the exact proportion of expenditures for services of these categories which should be charged to venereal disease control. At the same time, Federal venereal disease funds allotted thereto are identifiable; consequently, it is possible to go one step further toward arriving at an aggregate cost figure for State venereal disease activities than for health services of other types. In other words, from the standpoint of venereal disease control, the most precise expenditure figure available from this survey—which must still be regarded as an approximation—is composed of two elements: First, total funds expended for venereal disease activities designated as such and, second, *identified* venereal disease funds—notably Federal grants and contributions of voluntary health organizations—allotted to general health service. Within these limitations, table 3 presents the approximate gross and per capita annual expenditures of each State health department as interpreted by one or a combination of the functions termed: regulation, promotion and education, supervision and consultation, financial aid to subsidiary units, and direct service.

All funds disbursed by State health departments under the conditions set forth are recorded, irrespective of their source. As a matter of fact, Federal grants to health departments for venereal disease control represent approximately three-fourths of the aggregate amount expended for this purpose. Local participation, it will be recalled, is not covered by this report. The Federal allotments are distributed to the several States under authority of: (1) Title VI of the Social Security Act of 1935, and (2) the Venereal Disease Control Act of

TABLE 3.—*Approximate total and per capita expenditures\* by State health departments for venereal disease control in each State and Territory, the District of Columbia, and the Virgin Islands during the fiscal year 1939-40*

State or Territory	Approximate expenditure* for venereal disease control		State or Territory	Approximate expenditure* for venereal disease control	
	Total	Per capita		Total	Per capita
Total.....	\$5,104,100	\$0.039	Nevada.....	\$6,600	\$0.060
Alabama.....	162,600	.057	New Hampshire.....	20,800	.042
Arizona.....	15,200	.030	New Jersey.....	137,100	.033
Arkansas.....	111,700	.057	New Mexico.....	23,000	.043
California.....	247,000	.036	New York.....	368,900	.027
Colorado.....	36,500	.032	North Carolina.....	330,000	.092
Connecticut.....	48,400	.028	North Dakota.....	9,700	.015
Delaware.....	9,600	.036	Ohio.....	139,300	.020
District of Columbia.....	65,200	.103	Oklahoma.....	91,900	.039
Florida.....	72,200	.038	Oregon.....	32,100	.029
Georgia.....	185,000	.059	Pennsylvania.....	275,600	.028
Idaho.....	15,600	.030	Rhode Island.....	18,100	.025
Illinois.....	314,900	.040	South Carolina.....	122,200	.064
Indiana.....	98,300	.029	South Dakota.....	12,300	.019
Iowa.....	73,800	.029	Tennessee.....	143,600	.049
Kansas.....	52,700	.029	Texas.....	260,400	.041
Kentucky.....	106,600	.037	Utah.....	19,600	.036
Louisiana.....	105,000	.044	Vermont.....	19,000	.053
Maine.....	22,100	.026	Virginia.....	106,300	.040
Maryland.....	59,600	.033	Washington.....	42,300	.024
Massachusetts.....	342,800	.079	West Virginia.....	44,400	.023
Michigan.....	138,400	.026	Wisconsin.....	110,200	.035
Minnesota.....	79,200	.028	Wyoming.....	2,400	.010
Mississippi.....	146,000	.067	Alaska.....	3,700	.051
Missouri.....	106,800	.028	Hawaii.....	15,200	.036
Montana.....	6,000	.011	Puerto Rico.....	113,200	.061
Nebraska.....	13,200	.010	Virgin Islands.....	1,800	.072

\*Expenditures for the services considered represent index rather than absolute amounts; they include expenditures allocated specifically to venereal disease activities as such plus identified venereal disease funds assigned to general health projects, among which operation of public health laboratories, training of professional personnel, broad public health education programs, general communicable disease control, local health administration, public health nursing, and financial aid to local health units are outstanding. All funds disbursed by State health departments are recorded, irrespective of their source.

1938. Financial figures for the fiscal year 1940 were selected as being the most representative measure of the service described in the foregoing section of this report. Expenditures of State agencies other than health departments are not included because their participation in venereal disease services is so interrelated with other health activities that their records did not permit segregation of funds expended specifically for this purpose.

During the fiscal year 1940, venereal disease programs of State health departments cost in the aggregate more than 5 million dollars for the country as a whole. Of this amount, over 45 percent was expended directly by the State agencies for activities conducted exclusively for eradication of venereal disease, and about 40 percent was distributed to local health units for partial support of venereal disease programs operated by cities, counties, or other political subdivisions. This latter sum, of course, does not represent the full cost of services offered locally, but only the State agency's contribution to those services. A relatively small amount, less than 15 percent of the total expenditure, was assigned to venereal disease control listed under related State health department services, particularly local health

administration, general communicable disease control, diagnostic laboratory service, general health education, public health nursing activities, and training of public health personnel.

When the situation is viewed from the standpoint of the individual States, it is found to be characterized by extreme contrast. Among the several jurisdictions, the expenditure range extends from less than \$2,000 to over \$300,000, with the State occupying the median position reporting a total outlay of \$72,200. That some of this disparity may be explained by variation in the accounting practices of the several States is acknowledged. Nevertheless, marked differences in the content and coverage of State programs for venereal disease control are suggested also. Because of differences in State population, however, true diversities are not revealed until total expenditures are converted to expenditures per capita. According to table 3, extremes in per capita expenditures for State venereal disease services are defined by \$0.103 and \$0.010, typifying a ratio of 10 to 1; \$0.036 represents the median and \$0.039, the average per capita expenditure.

Search for causes of these differences led to consideration of the influence of several State characteristics. Purchasing power of the State as defined by per capita income<sup>6</sup> yielded no explanation of the differences in expenditures for venereal disease control, but location of a State within a particular geographic section of the country<sup>7</sup> (Northeastern, Southern, Central, and Western representing the geographic areas used for comparison) appeared to have some bearing upon the situation. Per capita disbursements of States in the Southern region ran considerably higher than did those of any other section, while the Central States expended relatively less than did any other area. The median per capita expenditure of each group of States classified according to geographic location is as follows: Southern, \$0.046; Northeastern, \$0.033; Western, \$0.030; and Central, \$0.028. Further investigation was made to determine whether magnitude of the problem within the individual States might be the underlying factor governing the geographic differences noted.

That there is significant difference among the several States with respect to the venereal disease problem has been emphasized by

<sup>6</sup> Martin, John L., National Income Division, Department of Commerce: *Income Payments to Individuals by States, 1929-39*. Survey of Current Business, October 1940.

<sup>7</sup> Mountin, Joseph W., Pennell, Elliott H., and Pearson, Kay: *The distribution of hospitals and their financial support in southern States*. Southern Med. J., Vol. 33, No. 4, April 1940.

The established geographic areas with the States contained therein are as follows:

Northeastern: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia.

Southern: Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

Central: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

Western: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

Vonderlehr and Usilton<sup>8</sup> in a report of the prevalence of syphilis among the first million men examined under the Selective Service Act of 1940. According to these data, the incidence rate per 1,000 selectees and volunteers examined ranges from 5.8 in New Hampshire to 170.1 in Florida. Using the rates established from this study as a measure of the venereal disease problem within the individual jurisdictions, the States were arrayed in descending order and divided into quarters. The median per capita expenditure for venereal disease control was then determined for each quarter.

From this procedure it was found that during the fiscal year 1939-40 States of the group having the greatest venereal disease problem expended relatively twice as much for venereal disease control as did States of the group having the least serious problem, the median per capita expenditures being \$0.057 and \$0.028, respectively. Furthermore, per capita expenditures of the second quarter of States, arranged according to their problems, fall between those of States having either the highest or lowest syphilis rates. True, decrease in expenditure does not absolutely accord with the drop in prevalence, for the median per capita expenditure by States of the third quarter is slightly less than that made by States of the quarter ranking lowest in the venereal-disease-problem scale. Nevertheless, this deviation from the general trend is not sufficient to alter the conclusion that, for the most part, extent and intensity of service afforded by State agencies for venereal disease control are related to extent and intensity of the problem itself. At least, the 50 percent of the States with the most serious problem expend appreciably more than do the corresponding proportion where the prevalence rates are lower.

As reported in 1930, State health departments expended in the aggregate less than a half million dollars for venereal disease control. At that time, of course, no Federal aid was available and the entire financial burden was borne by State legislative bodies.

#### DISCUSSION

Activities carried on by State agencies for venereal disease control have markedly expanded during the past decade. Federal grants and recognition of the true magnitude of the venereal disease problem have acted as effective stimuli to increased activity by State agencies for venereal disease control. Without exception, the health department is the official State agency charged with major responsibility for this field of work, but in some States the department of welfare, department of education, State university hospital, independent State hos-

<sup>8</sup> Vonderlehr, R. A., and Usilton, Lida J.: Syphilis among selectees and volunteers—Prevalence in first million men examined under the Selective Service Act of 1940. *J. Am. Med. Assoc.*, 117:1350 (October 18, 1941).



pital, or independent State laboratory supplements the efforts of the health department.

Venereal disease programs of 1940 stress activities designed to reduce the prevalence of syphilis, but in comparison relatively little is done toward regulating the spread of gonorrhea. That improved case-finding and complete treatment are the two essential elements of syphilis control appears to be the consensus of administrators charged with the several State programs. Notwithstanding, the methods of administering these control measures vary with the individual States. Law enforcement is a weapon consistently employed, while promotional and educational activities, likewise, are engaged in by all State health departments. In addition, the extension of supervisory and consultatory service to local health organizations is a practice quite uniformly followed.

Basic differences among the States hinge upon the portion of their program which is administered directly by State personnel and the portion that is delegated to local jurisdictions but partially supported by the State agency. Instead of offering service directly, one-half of the State health departments function through local health units by distributing to them financial assistance for clinic service; nearly one-fifth of the State agencies either maintain their own clinics or immediately aid in the support of those under other sponsorship; and over a fourth follow a combined procedure. Inquiry regarding the extent and intensity of clinic service arranged for by the State agency was not featured in this study, nor was the degree to which State service of any kind is influenced by complementary local programs fully determined. Nevertheless, it is indicated that the amount of State service offered is largely contingent upon needs unmet by local health agencies. In only two jurisdictions does the State health department fail to participate in any way in clinic service for the diagnosis and treatment of venereal disease; here, the State agency finances, on an individual basis, the treatment of indigent patients by private physicians in their offices.

Astounding growth has marked the development of State venereal disease programs during the past ten years.<sup>9</sup> Currently, the State agency without exception both finances—either partly or wholly, and either directly or indirectly—professional care afforded indigent venereal disease patients and supplies the drugs used in their treatment. In 1930, only 33 States participated in any way in provision of treatments for indigents. The most recent survey revealed that free diagnostic laboratory service was offered without economic restriction by all but three health departments; ten years ago 41 States reported the availability of similar service. The volume of both

<sup>9</sup> See footnote 1.

diagnostic and treatment service has been greatly expanded in all instances. As to expansion of epidemiological activities, precise comparative data are not available. However, it is quite reasonable to assume that State participation in this field of work has been enlarged also as a result of increase in the number of personnel employed. The present status of epidemiology as applied to the venereal diseases, and particularly to syphilis, may be defined as follow-up of cases which have lapsed treatment and contacts, with special attention focused upon early infectious cases and pregnancies.

Much of the contrast cited is attributable to Federal leadership and financial aid. Further evidence of expansion in State activities for venereal disease control is found in the expenditures reported in the two surveys. The most recent data point to an aggregate annual expenditure of over 5 million dollars for the venereal disease control activities of all State health departments. This figure represents a per capita expenditure of \$0.039. It encompasses only activities which could be described specifically as venereal disease measures and identified venereal disease funds allotted to related activities of State health departments or to local health units. It does not take into account items which are hidden under other designations. The corresponding expenditure figures for 1930 were: aggregate, \$436,600; per capita, \$0.004. Wide divergence obtains among the several jurisdictions in their outlay for venereal disease control, but, to a large extent, expenditures are related to the seriousness of the problem in in the respective States.

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### A NEW BASE FOR THE PROTECTIVE OINTMENT FOR THE PREVENTION OF POISON IVY DERMATITIS

By LOUIS SCHWARTZ, *Medical Director*, JOHN E. DUNN, *Passed Assistant Surgeon*, and F. H. GOLDMAN, *Chemist*, *United States Public Health Service*

Schwartz, Warren, and Goldman prepared an alkaline vanishing cream containing a nonirritant oxidizing agent, such as sodium perborate or potassium iodate, and stated that it was an effective preventive against poison ivy dermatitis.<sup>1</sup> Shelmire failed to confirm these results.<sup>2</sup>

Schwartz et al. stated that the cream should be freshly prepared in order to be effective because the oxygen was continuously liberated and the cream lost much of its efficacy after 2 weeks. This fault in

<sup>1</sup> Schwartz, Louis, Warren, Leon H., and Goldman, Frederick H.: Protective ointment for the prevention of poison ivy dermatitis. *Pub. Health Rep.* 55:1327 (July 26, 1940). (This perborate vanishing cream, modified by the addition of tragacanth, 4 percent, is now also being successfully used as a protective against and curative ointment for tetryl dermatitis.)

<sup>2</sup> Shelmire, Bedford: Sodium perborate ointment and poison ivy dermatitis. *J. Am. Med. Assoc.*, 116: 681-683 (Feb. 22, 1941).

the cream made it impracticable to manufacture for commercial purposes because it would necessarily remain on the shelves of drug stores over an extended period. In order to remedy this fault, experiments were undertaken to develop an ointment base in which the oxidizing agent would remain stable for a reasonable length of time, and yet would give up its oxygen readily under the conditions existing when it is applied to the skin.

It will be noted from a review of the experiments described in the original article (see footnote 1) that the protection afforded by the detoxifying action of sodium perborate is relative and not absolute. There are three variable factors that determine whether a reaction of the skin will occur in any experimental test of the protective value of sodium perborate against the active principle of poison ivy. These are: (1) the amount of the active principle of poison ivy used in the experimental test; (2) the amount of sodium perborate available to act on the active principle of poison ivy; and (3) the degree of sensitivity of the experimental subject. Unfortunately, there are not as yet satisfactory methods for measuring quantitatively the first and last of these three factors.

Briefly, (1) the active principle of poison ivy can be detoxified when subjected to oxidation by a chemical agent having an oxidation potential of the order of sodium perborate; (2) when sodium perborate is properly incorporated in a suitable ointment base, it has an oxidizing effect on poison ivy coming in contact with it and acts as a protective coating on the skin of persons sensitive to poison ivy under conditions of natural exposure, if certain rules for its use are observed.

In regard to the first statement, evidence was presented in the original article to show that sodium perborate and potassium periodate can detoxify the active principle of poison ivy in an acetone-aqueous medium. The following experiment was done in confirmation of these results.

*Experiment 1.*—One part of the stock solution of poison ivy extract (Lederle extract containing 130 mg. of oleoresin per cc. of acetone) was diluted with 64 parts of acetone. To a portion of this diluted extract was added an equal amount of a saturated aqueous solution of sodium perborate and to this mixture was added a small excess of sodium perborate powder. The final mixture, containing 1.0 mg. of oleoresin per cc., was allowed to stand 15 hours. At the end of this time a portion of the solution was tested with potassium iodide crystals. A brown color of free iodine resulted, indicating that unreduced sodium perborate was still present in the solution. Two individuals sensitive to poison ivy were then tested with this solution by dipping a cotton applicator in the solution and painting a streak about 1 inch long on the anterior aspect of one arm of each subject.

Previously each of these subjects had given a positive reaction to an acetone dilution of the stock poison ivy extract containing 1.0 mg. of the oleoresin per cc., when applied in a similar manner. In this experiment no reactions resulted from the application of the poison ivy extract treated with sodium perborate.

Later, two highly sensitive subjects were selected for testing who had been shown previously to be sensitive to an acetone dilution of the stock poison ivy extract containing 0.25 mg. of oleoresin per cc., when applied with a cotton swab to an area approximately 3 cm. by 6 mm. on the anterior aspect of the arm.

Because of the inexactness of the dosage of the oleoresin when applied in this manner, a different technique was developed for applying solutions to the skin. A hole 1.5 cm. in diameter was cut in a lead sheet  $\frac{1}{8}$  inch thick, the area of this hole corresponding to the area 3 cm. by 6 mm. covered when solutions were applied with a cotton swab. Melted paraffin was spread around the hole on one surface, and this surface was then placed on the area of skin selected for testing. The paraffin was used to prevent the solution placed on the skin area visible through the hole from "creeping" under the lead plate. One-tenth of a cc. of the solution being tested was flowed from a pipette onto the skin area exposed through the hole in the lead sheet, and the lead plate was held in place until the solution had dried. A current of air from an air line was used to hasten drying.

One cc. of the solution of poison ivy extract, containing 1.0 mg. of oleoresin per cc. and which had been treated with an excess of sodium perborate, was mixed with 3 cc. of a saturated aqueous solution of sodium perborate. This mixture then contained 0.25 mg. of oleoresin per cc. Using the perforated lead sheet according to the technique described above, 0.1 cc. of this solution was applied to the anterior aspect of the arm on each of the two subjects. No reaction resulted from these tests.

From this experiment it may be said that sodium perborate is capable of detoxifying the active principle of poison ivy. In the experiments cited in the original article (see footnote 1), the detoxification of the poison ivy extract, when treated with sodium perborate, was not always sufficient to reduce the concentration of the active principle below the threshold concentration of the subject being tested. This was due to the high concentrations of poison ivy extract used. When the concentration of the extract is reduced to a level more nearly approaching the patient's threshold, sodium perborate is capable of detoxifying a sufficient amount of the active principle so that no reaction occurs. It is felt that these concentrations are more nearly comparable to the conditions of natural exposure as well. Other investigators agree that the active principle of poison ivy can

be destroyed with sodium perborate<sup>3</sup> and hydrogen peroxide.<sup>4</sup> Hydrogen peroxide and sodium perborate are comparable in their oxidation potentials.

In regard to our second statement, namely, that when sodium perborate is properly incorporated in a suitable ointment base it is effective as a protective coating on the skin of persons sensitive to poison ivy under conditions of natural exposure if certain rules for its use are observed, it is now possible to report on the results of certain field trials. Before describing these practical demonstrations, however, additional experimental work relating to this point will be cited:

*Experiment 2.*—A group of 17 individuals sensitive to poison ivy agreed to act as subjects for a study of the value of the oral administration of poison ivy extract for desensitization. Preliminary to the administration of the poison ivy extract each subject was patch tested with various dilutions of poison ivy extract in corn oil to determine his degree of sensitivity. The dilutions of poison ivy extract in corn oil<sup>5</sup> used were: 1:5000, 1:1000, and 1:500. Those individuals who gave a history of extreme sensitivity to poison ivy were not tested with all dilutions, but in each case a positive reaction was obtained with at least one dilution. The patch-test procedure consisted of taking a swatch of close-woven gauze, approximately  $\frac{1}{4}$  inch square, and placing it on the skin of the ventrum of the forearm. One drop of extract was placed on the gauze, and over this was placed an adhesive plaster strip with a cellophane disc in its central portion to overlie the gauze patch. Patch tests were removed at the end of 24 hours and the patch tests observed for reactions. Readings were made on the succeeding two days following removal of the patch.

At the time these patch tests to determine the degree of sensitivity of the experimental subjects were performed, similar patch tests were applied to the ventrum of the other forearm on skin areas protected with a layer of sodium perborate ointment. Two different ointment bases, each containing 10 percent sodium perborate, were used, one ointment base being used on 11 persons, and the other on 6. Not all dilutions of the poison ivy extract were used in this series of patch tests, but in the case of each individual at least one dilution was used which caused a reaction on the unprotected skin of the other forearm. In the case of 11 subjects no reactions occurred at the site of patch tests where the skin was protected with sodium perborate ointment. Six individuals gave positive reactions to the patch tests placed over protective ointment, but in each case these reactions were

<sup>3</sup> Gisvold, Ole: The effect of some adsorbents, precipitants, and oxidants upon the resin of *Rhus toxicodendron*. J. Am. Phar. Assoc., 30:17-18 (January 1941).

<sup>4</sup> Zwick, Karl G.: Notes on cutaneous hazards from phanerogamous plants. Med. Bull., University of Cincinnati, 8:69-78 (February 1941).

<sup>5</sup> Supplied by Lederle Laboratories.



less than the reaction for the corresponding dilution on the unprotected skin. There was no apparent difference in the effectiveness of the two ointments.

*Experiment 3.*—A 10-percent sodium perborate ointment was prepared in the laboratory by mixing an appropriate amount of finely ground sodium perborate powder with an ointment base. The ointment base and the ointment base containing the sodium perborate were then spread on the skin of the arm of a subject who had previously been shown to be sensitive to an acetone dilution of the poison ivy extract containing 1.0 mg. of the oleoresin per cc. A cotton applicator was then dipped in an acetone solution of poison ivy extract of this dilution and wiped over the two areas covered with the ointment base and the perborate ointment, respectively. The areas wiped with the swab measured 3 cm. by 6 mm. Several hours later the ointment base and the perborate ointment were washed off the skin. No reaction occurred at the site of the perborate ointment, but an erythematous streak appeared in 48 hours at the site of the ointment base alone.

This subject was again tested with a 10-percent sodium perborate ointment, using the lead sheet for controlling the skin area tested according to the technique previously described. A skin area was coated with the perborate ointment and the perforated lead sheet laid lightly on top of the ointment. A tenth of a cc. of an acetone dilution of the poison ivy extract containing 1.0 mg. per cc. was then placed on the ointment-protected skin exposed in the perforation of the lead sheet. The acetone was allowed to evaporate and then the lead plate was removed. In removing the plate, some of the ointment was pulled off the skin at one point in the circumference of the hole. The ointment was washed off the arm with soap and water 2 hours later. A slight, crescentic, erythematous reaction occurred 48 hours later at a point corresponding to the point where the ointment film was broken in removing the lead plate, but the rest of the test area showed no reaction.

These experimental results support the contention stated above, and confirm the work reported in the original article.

#### FIELD TRIALS

In order to test the practicability of the poison ivy protective ointment where used under conditions for which it was intended, arrangements were made for field trials in two government camps where work was being done on reclamation projects, and in a boys' summer camp.

Two different ointment bases were used for preparing the poison ivy cream supplied to the government camps and these bases will be

commented on in the discussion of the new formula. In one camp, the men working in areas infested with poison ivy were divided into two groups of about 20 men each. One group was given the protective ointment containing one base, and the other group was given the ointment containing the other base. During the poison ivy season there were only four cases of poison ivy dermatitis in this camp. Two of the patients were workmen who were not using the protective ointment because they normally were not exposed to poison ivy in their work; these two acquired their dermatitis through inadvertent contact with poison ivy. Upon investigation, the other two patients were found not to have used the protective ointment according to directions. Many of the men working in the camp during 1941 had been in the camp in 1940 when there had been 23 cases of poison ivy during the season. The growth of poison ivy in the locality was said to have been more luxuriant in 1941 because of heavier rainfall.

In the other camp where the poison ivy protective ointment was given a field trial, there were 47 cases of poison ivy dermatitis during 1941, of which only 7 were of sufficient severity to require the attention of a physician. The average number of employees during the year was 380, which gives an incidence of poison ivy dermatitis of 12.4 percent, as compared to an average incidence of 36.9 percent during the previous 2 years. Many of the cases of poison ivy dermatitis that did occur during 1941 were among new employees who did not use the protective ointment properly; other cases occurred among those who, for one reason or another, were exposed to poison ivy at a time when they were not using the ointment.

Because of the favorable experience in the use of the poison ivy protective ointment in these two camps, the Bureau of Reclamation is planning to supply this ointment to all projects where exposure to poison ivy, poison sumac, and poison oak occurs. (See addendum 4.)

The boys' camp used the protective ointment on about 20 men who were employed in the spring of 1941 to clean up the camp grounds and remove poison ivy. Five of these were reported to have had mild attacks of poison ivy dermatitis. The previous spring nearly all the men had been affected. Information is not available as to how closely instructions regarding the method of using the ointment were followed. The use of the protective ointment by the children at the camp was found to be impracticable because they could not be depended upon to use the ointment properly.

It was the consensus of those who had direct supervision of the use of the poison ivy protective ointment in these camps that the ointment does afford protection when it is properly used. A number of persons,

most of them being physicians and scientific personnel at the National Institute of Health, who were furnished this protective ointment for use while clearing poison ivy from their gardens and residential property, also reported that it had been used with success.

#### NEW OINTMENT BASE

Two formulas were used in making the poison ivy protective ointment for the field trials.

##### *Formula 1*

	<i>Percent</i>
Castor oil.....	21.5
Olive oil.....	21.5
Lanolin, anhydrous.....	21.5
Diglycol stearate.....	12.9
Paraffin, refined.....	8.6
Boric acid.....	2.0
Sodium perborate.....	10.0
Duponol WA pure.....	2.0

##### *Formula 2*

	<i>Percent</i>
Cetyl alcohol.....	35.1
Stearyl alcohol.....	5.3
Ceresin.....	3.5
Castor oil.....	20.8
Mineral oil.....	21.9
Duponol WA pure.....	1.7
Sodium perborate.....	10.0
Boric acid.....	1.7

Both of these ointment bases were satisfactory from the standpoint of physical properties, and the sodium perborate was more stable in either of them than it had been in the vanishing cream base originally used (footnote 1).

The formula for the first ointment has a greasier base than the second. The ointment base for the second formula is a modification of one suggested by Mr. George C. Schicks, assistant dean of Rutgers University,<sup>6</sup> and has the advantage of being less greasy and for that reason more pleasant to use than the first ointment suggested. In the field trials, however, it was reported that the first ointment was more stable in extreme summer heat than the second, and that it was necessary to keep the second ointment stored in a cool place until used. The two were equally effective, however, as protectives against poison ivy.

In preparing ointments containing sodium perborate, special care must be exercised in adding the sodium perborate, as it is so rapidly broken down by heat. Water must be eliminated from the ointment base because this will also cause the perborate to break down.

<sup>6</sup> Personal communication.

## SUMMARY AND CONCLUSIONS

The contention that sodium perborate can detoxify the active principle of poison ivy in an acetone-aqueous medium is confirmed.

Further experimental evidence and the results of field trials are presented to support the contention that a suitable ointment base containing sodium perborate is an effective preventive against poison ivy dermatitis when certain rules for its use are observed. It must be remembered that this ointment will neutralize only as much poison ivy as there is available oxygen on the skin contacted; therefore a thick layer of the ointment is advised. Clothes must be removed after exposure before the ointment is washed off, otherwise the unprotected skin may be exposed to clothes which have been contaminated. Before clothes are again worn, they must be decontaminated. Tools and instruments which have been used in cutting poison ivy must be decontaminated before being used again. Decontamination can be effected by washing or immersing for 15 to 20 minutes in a 1 percent solution of calcium hypochlorite.

There are presented and discussed two new formulas for sodium perborate ointment in which the sodium perborate will retain its oxygen for several weeks if kept in a closed container, but will liberate it when exposed to perspiration or water.

## ADDENDUM 1

## FEDERAL WORKS AGENCY

## WORK PROJECTS ADMINISTRATION

*Bismarck, North Dakota*

## BUFORD-TRENTON IRRIGATION PROJECT

THOMAS H. MOODIE  
*State Administrator*

*June 26, 1941.*

To: Dr. Louis Schwartz, *Medical Director, U. S. Public Health Service*  
From: John A. Harter, *Project Safety Inspector*  
Subject: Poison Ivy Protective Cream

We received the shipment of protective cream and have been using it according to directions.

Since the first of May we have had an average of from 20 to 30 men working in poison ivy infested areas. These are the men we have been using the cream on.

To date we have not had a single case of poison ivy, and this compares with 11 reported cases at this time last year, 3 of which were doctor's cases and involving some lost time and medical expense.

At the end of the season I will be able to furnish you with complete figures for the 2 years, but I would say at this time that there is evidence of a very decided decrease in infection due to the use of the protective cream.

Yours very truly,

(Signed) JOHN A. HARTER,  
*Safety Inspector.*

## ADDENDUM 2

U. S. BUREAU OF RECLAMATION  
BUFORD-TRENTON PROJECT

October 14, 1941.

From: Project Safety Engineer  
To: Resident Engineer  
Subject: Poison Ivy Protective Cream

1. During the season of 1941 we used the protective cream only on the men who were working daily in poison ivy infested areas.

2. While the total number of men working on the project was somewhat smaller for the season of 1941 than for 1940, there were approximately the same number working in infested areas, so the comparison for the 2 years is a fairly accurate one.

3. During the season of 1940 we had 23 reported cases of poison ivy infection, 4 of which were treated by a doctor. During the season of 1941 we had 4 reported cases, none of which were serious enough to require medical treatment. It should also be noted that of the 4 cases this year, 2 were of men not using the protective cream.

4. I have been advised by local doctors and druggists that there were more severe cases of infection this year than last, probably due to the fact that more than normal rainfall has produced an excessive growth of the plant.

5. Unquestionably, the use of the protective cream on the project this season has shown positive results.

JOHN A. HARTER

## ADDENDUM 3

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION  
Redding, California

November 13, 1941

Memorandum to construction engineer

(F. I. Ross)

Subject: Accident Prevention Program—Prevention and Treatment of Poison Ivy, Poison Oak, and Poison Sumac Cases

1. Reference is made to the Acting Chief Engineer's letter of November 3, 1941, requesting reply to the Acting Commissioner's letter of October 29, 1941, on the above subject.

2. Item (b) of the Acting Commissioner's letter of October 29, 1941, reads as follows.

(b) How does the 1941 record of the number and severity of poison oak cases on the Kennett Division compare with that of 1940 and previous years?

*Statistical report and analysis*

	1938	1939	1940	1941	Total
Average number of employees.....	200	283	327	380	298
Estimated number of first-aid cases.....	No	120	75	40	235
	record				
Number of medical cases.....	16	20	10	7	53
Number of lost-time cases.....	1	4	1	3	9
Number of days lost.....	6	11	4	9	30



April 17, 1942

There is a noticeable reduction in the number of medical cases in comparison to the number of men employed. The records indicate that the 7 medical cases and 3 lost-time cases in 1941 could have been avoided by proper use of preventions and first-aid treatment. These cases were the results of new employees being exposed to poison oak without adequate or proper instruction as to the necessary precautions, preventive measures, and personal hygiene. Therefore had the protection cream (base "77") which was available been used as directed and subsequent necessary first-aid treatment rendered, the reduction in medical cases would have been far more favorable and would have more definitely established the value of the protective cream.

3. Item (c) of the Acting Commissioner's letter of October 29, 1941, reads as follows.

(c) Statement is made by Mr. Ross that base "A" cream lost its oxygen content rapidly at high temperatures. Were the temperatures at which the cream "A" began to lose its oxygen noted?

The temperatures were not noted in the warehouse where the cream was stored. The temperature in the field was from 75 to 90 degrees and the base "A" cream liberated its oxygen content within 2 to 6 hours when exposed to these temperatures.

4. Item (d) of the Acting Commissioner's letter of October 29, 1941, reads as follows:

(d) For what maximum temperatures could the "A" and "77" creams each be considered effective?

Experience indicates that the base "A" cream cannot be stored or used under conditions where temperatures exceed 70 degrees and it is entirely too sensitive for practical field use. The base "77" in small containers (not to exceed 6 ounces) can be stored and used under summer weather conditions in areas where the temperature ranges from 75 to 115 degrees.

The reasons for the small containers are:

(1) So that the amount of cream taken out into the field will only be a 1-day supply.

(2) The cream is less sensitive to heat and liberates its oxygen content slower when it is placed in small containers (not over 6 ounces).

F. I. ROSS,  
*Safety Engineer.*

#### ADDENDUM 4

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

*Office of Chief Engineer*

*Customhouse,  
Denver, Colorado*

*October 21, 1941.*

From: Acting Chief Engineer.

To: Commissioner.

Subject: Accident Prevention Program—Prevention and Treatment of Poison Ivy, Poison Oak, and Poison Sumac Cases.

1. Reference is made to the Acting Commissioner's letter of October 8, 1941, on the above subject.

2. There are enclosed copies of reports prepared by the safety engineers on the Buford-Trenton project and the Kennett Division of the Central Valley project concerning their experience with the use of the protective cream which was

furnished by the Public Health Service, and also a copy of a circular issued to the employees on the Kennett Division on the subject of poison oak.

3. It will be noted from these reports that the use of the protective cream brought favorable results on both projects where it was given a trial.

4. It is suggested that arrangements be made, through the Public Health Service or otherwise, to make this protective cream available to all of the projects where poison ivy, poison oak, or poison sumac is prevalent.

In dupl.

Encs.

WALTER R. YOUNG.

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## DISABLING MORBIDITY AMONG INDUSTRIAL WORKERS, FINAL QUARTER OF 1941<sup>1</sup>

By W. M. GAFAFER, *Senior Statistician, United States Public Health Service*

The accompanying data are derived from analyses of periodic reports on sickness and nonindustrial injuries causing disability lasting more than one week among over 200,000 male members of industrial sick benefit associations, group insurance plans, and company relief departments.

*Final quarter of 1941.*—A comparison of the rates for the fourth quarter of 1941 with the corresponding rates for 1940 reveals a 35 percent increase in the frequency of bronchitis, over a 20 percent increase in diseases of the stomach, except cancer, and about a 15 percent increase in appendicitis. In fact the fourth quarter rates for 1941 covering these three causes are the highest yielded during the past 10 years, 1932-41. When the rates are related to the appropriate means for the 10 quarters, the following percentage excesses result: bronchitis, 38 percent; diseases of the stomach, except cancer, 22 percent; and appendicitis, 35 percent.

*The year 1941.*—A number of causes show unusually high rates for both 1941 and 1940. It is of interest to compare the rates for 1941 with the means of the corresponding rates covering the past 10 years. The causes together with their percentage excesses include pneumonia, 42 percent; bronchitis, 33 percent; and appendicitis, 24 percent. It is noteworthy also that the 1941 rates for these three causes have never been equalled or exceeded during the 10 years under examination. Finally the rate for all disabilities, 101.8, is the highest recorded for the 10-year experience, the rate being 12 percent in excess of the 10-year mean (90.6).

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<sup>1</sup> From the Division of Industrial Hygiene, National Institute of Health. The report for the third quarter appeared in *PUBLIC HEALTH REPORTS*, 56: 2428-2429 (December 19, 1941).

**TABLE 1.—Frequency of disabling cases of sickness and nonindustrial injuries lasting 8 consecutive calendar days or longer among MALE employees in various industries, by cause, the fourth quarter of 1941 compared with the fourth quarter of 1940, and the full year of 1941 compared with the full years 1936-40, inclusive**

Cause (numbers in parentheses are disease title numbers from the International List of Causes of Death, 1939)	Annual number of cases per 1,000 males				
	Fourth quarter		Full year		
	1941	1940	1941	1940	1936-40
Sickness and nonindustrial injuries <sup>1</sup> .....	92.5	85.5	101.8	96.7	92.1
Nonindustrial injuries (160-195).....	12.1	12.1	11.9	11.8	11.3
Sickness.....	80.4	73.4	89.9	84.9	80.8
Respiratory diseases.....	32.6	30.5	41.2	37.8	34.7
Influenza and grippe (33).....	11.9	12.8	19.0	17.4	16.1
Bronchitis, acute and chronic (106).....	6.2	4.6	5.7	5.3	4.7
Diseases of the pharynx and tonsils (115b, 115c).....	4.3	4.2	5.5	4.9	4.8
Pneumonia, all forms (107-109).....	2.8	2.7	3.7	3.5	2.9
Tuberculosis of the respiratory system (13).....	.5	.7	.7	.7	.8
Other respiratory diseases (104, 105, 110-114).....	6.9	5.5	6.6	6.0	5.4
Nonrespiratory diseases.....	44.7	41.0	45.6	45.0	43.7
Digestive diseases.....	15.4	12.7	15.3	14.4	13.8
Diseases of the stomach except cancer (117, 118).....	4.4	3.6	4.2	3.9	3.9
Diarrhea and enteritis (120).....	1.4	1.1	1.5	1.3	1.2
Appendicitis (121).....	5.4	4.7	5.2	5.1	4.5
Hernia (122a).....	1.4	1.1	1.5	1.5	1.6
Other digestive diseases (115a, 115d, 116, 122b-129).....	2.8	2.2	2.9	2.6	2.7
Nondigestive diseases.....	29.3	28.3	30.3	30.6	29.9
Diseases of the heart and arteries, and nephritis (90-99, 102, 130-132).....	3.4	4.3	3.9	4.5	4.2
Other genitourinary diseases (133-138).....	2.4	3.0	2.4	2.8	2.4
Neuralgia, neuritis, sciatica (87b).....	2.1	2.0	2.0	2.4	2.3
Neurasthenia and the like (part of 84d).....	.7	.9	1.0	1.1	1.0
Other diseases of the nervous system (80-85, 87, except part of 84d, and 87b).....	1.4	.9	1.3	1.0	1.1
Rheumatism, acute and chronic (58, 59).....	3.2	3.6	3.8	4.0	3.9
Diseases of the organs of locomotion, except diseases of the joints (156b).....	3.1	2.8	2.9	2.9	2.9
Diseases of the skin (151-153).....	2.5	2.5	2.8	2.7	2.9
Infectious and parasitic diseases <sup>2</sup> (1-12, 14-24, 26-29, 31, 32, 34-44).....	2.4	1.2	2.5	1.8	2.2
All other diseases (45-57, 60-79, 88, 89, 100, 101, 103, 154, 155, 156a, 157, 162).....	8.1	7.1	7.7	7.4	7.0
Ill-defined and unknown causes (200).....	3.1	1.9	3.1	2.1	2.4
Average number of males covered in the record.....	247,626	212,285	241,304	202,910	178,340
Number of organizations.....	24	26	26	26	.....

<sup>1</sup> Exclusive of disability from the venereal diseases and a few numerically unimportant causes of disability.

<sup>2</sup> Except influenza, respiratory tuberculosis, and the venereal diseases.

## PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

March 1-28, 1942

The accompanying table summarizes the prevalence of nine important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the PUBLIC HEALTH REPORTS under the section "Prevalence of disease." The table gives the number of cases of these diseases for the 4-week period ended March 28, 1942, the number reported for the corresponding period in 1941, and the median number for the years 1937-41.

## DISEASES ABOVE MEDIAN PREVALENCE

*Measles.*—The number of cases (86,298) of measles reported for the 4 weeks ended March 28 was only about 55 percent of the number reported during the corresponding period in 1941, but it was about 1.4 times the preceding 4-year average incidence for this period. The Middle Atlantic region alone reported a decline from the seasonal expectancy. In the Pacific region the number of cases (21,911) was almost seven times the 1937-41 average incidence and in the West South Central region the number (13,264) was about four and one-half times the normal seasonal incidence; in other regions the excesses were smaller. During the corresponding period in 1941 measles were unusually prevalent in the Middle Atlantic, East North Central, and South Atlantic regions.

*Number of reported cases of 9 communicable diseases in the United States during the 4-week period March 1-28, 1942, the number for the corresponding period in 1941, and the median number of cases reported for the corresponding period, 1937-41*

Division	Current period	1941	5-year median	Current period	1941	5-year median	Current period	1941	5-year median
	Diphtheria			Influenza <sup>1</sup>			Measles <sup>1</sup>		
United States.....	1,175	1,110	1,724	18,831	32,019	33,101	86,298	156,391	62,298
New England.....	25	9	32	36	159	159	6,153	3,899	4,041
Middle Atlantic.....	178	180	333	108	584	319	8,552	55,408	13,320
East North Central.....	187	211	339	533	1,940	1,940	7,891	56,218	5,135
West North Central.....	80	76	141	231	1,393	1,301	9,483	4,320	4,500
South Atlantic.....	156	205	283	6,029	11,085	11,834	13,329	19,509	11,873
East South Central.....	156	74	115	1,732	3,421	3,421	1,898	6,829	1,680
West South Central.....	255	209	265	7,302	10,377	12,109	13,264	4,502	2,964
Mountain.....	54	76	76	2,019	1,257	1,185	3,807	2,491	2,725
Pacific.....	84	70	107	841	1,893	1,539	21,911	3,224	3,224
	Meningococcus meningitis			Poliomyelitis			Scarlet fever		
United States.....	339	195	201	80	69	74	18,079	16,284	21,157
New England.....	50	12	12	3	1	1	1,810	935	1,406
Middle Atlantic.....	93	34	44	7	2	7	5,269	4,726	6,947
East North Central.....	25	25	33	14	5	13	5,420	5,362	7,796
West North Central.....	8	12	12	9	8	4	2,005	1,450	2,308
South Atlantic.....	74	43	43	10	15	11	1,184	999	999
East South Central.....	22	32	32	9	10	10	794	1,249	648
West South Central.....	38	18	19	9	10	11	307	429	587
Mountain.....	3	6	7	6	4	4	552	432	627
Pacific.....	26	13	13	13	9	9	738	702	1,162
	Smallpox			Typhoid and paratyphoid fever			Whooping cough <sup>1</sup>		
United States.....	95	183	1,290	262	337	423	15,057	17,791	16,136
New England.....	0	0	0	8	12	11	1,835	1,465	1,448
Middle Atlantic.....	0	0	0	47	44	47	3,907	3,230	3,877
East North Central.....	18	58	199	29	37	47	3,059	3,555	2,991
West North Central.....	22	77	290	10	14	22	6,332	1,548	924
South Atlantic.....	2	2	8	66	68	68	1,626	2,912	2,667
East South Central.....	11	8	8	28	51	34	566	645	523
West South Central.....	39	13	98	40	47	63	838	1,434	1,161
Mountain.....	3	7	78	8	37	19	863	926	850
Pacific.....	0	18	193	26	27	27	1,731	2,076	1,684

<sup>1</sup> Mississippi, New York, and Pennsylvania excluded; New York City included.

<sup>2</sup> Mississippi excluded.

<sup>3</sup> 4-year (1938-41) average.

*Meningococcus meningitis*.—The number of cases of meningococcus meningitis was also relatively high, 339 cases being reported for the current period, as compared with 195 in 1941 and an average of 201 cases for the corresponding period in the 5 preceding years. States contributing largely to the increase were in widely scattered regions. New York reported 59 cases, Massachusetts and Texas 29 each, Virginia 22, Maryland 20, and Rhode Island, Pennsylvania, and California 17 cases each—more than two-thirds of the total cases were reported from those eight States. An increase in this disease is normally expected at this season of the year and in preceding years the peak has usually been reached during the period corresponding to the one under consideration.

*Poliomyelitis*.—While the incidence of poliomyelitis has been gradually declining toward the low level of this disease which is usually reached during April or May, the number of cases (80) reported for the current period was slightly above the average level of preceding years. Ten cases were reported from California but no more than four cases were reported from any other State.

#### DISEASES BELOW MEDIAN PREVALENCE

*Diphtheria*.—For the 4 weeks ended March 28 there were 1,175 cases of diphtheria reported, as compared with 1,110, 1,273, and 1,724 for the corresponding period in 1941, 1940, and 1939, respectively. The number of cases occurring during the current period was slightly above the all-time low incidence recorded for this period in 1941, but it was only about 35 percent of the 1937–41 average incidence for the period. While in some regions the number of cases was larger than in 1941, the East South Central region alone reported an excess over the average seasonal incidence.

*Influenza*.—For the country as a whole the incidence of influenza was also relatively low, approximately 19,000 cases being reported for the current period, as compared with approximately 32,000, 33,000, and 63,000 cases for the corresponding period in 1941, 1940, and 1939, respectively. The West South Central and South Atlantic regions continued to report the largest numbers of cases, but even there the incidence was comparatively low. Wyoming and Arizona in the Mountain region seemed to be mostly responsible for a slight increase over the normal expectancy in that region.

*Scarlet fever*.—This disease was more prevalent than it was at this time in 1941, but the number of cases (18,079) was only about 85 percent of the 1937–41 median incidence for the period. A very significant increase over the normal seasonal expectancy was reported from the New England region, with minor excesses in the South Atlantic and East South Central regions. In other regions the



situation was quite favorable, the decreases ranging from about 12 percent in the Mountain region to almost 50 percent in the West South Central region.

*Smallpox.*—The incidence of smallpox was again comparatively low, 95 cases being reported during the current period as compared with 183 in 1941 and an average of 1,290 cases for the corresponding period in 1937-41. For the country as a whole the number of cases was the lowest on record for this period.

*Typhoid and paratyphoid fever.*—The number of cases (262) of this disease reported during the current 4-week period was the lowest on record for this period. In the Middle Atlantic, South Atlantic, and Pacific regions the incidence stood at about the expected seasonal level, but in all other regions the numbers of cases were relatively low.

*Whooping cough.*—Whooping cough was slightly less prevalent than it was during this period in recent years, 15,057 cases as compared with approximately 18,000 cases in 1941 and an average of approximately 16,000 cases in the years 1938-41. The New England region reported an excess of about 25 percent over the seasonal expectancy and the South Atlantic region reported a decline of about 40 percent in the incidence, while in other regions the incidence stood at about the normal seasonal level.

#### MORTALITY, ALL CAUSES

The average mortality rate from all causes in large cities for the 4 weeks ended March 28, based on data received from the Bureau of the Census, was 12.6 per 1,000 inhabitants (annual basis). The rate for the corresponding period in 1941 was 12.7 and the 1939-41 average rate was 12.8. The current rate apparently is about normal for this season of the year.

#### DEATHS DURING WEEK ENDED APRIL 4, 1942

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Apr. 4, 1942	Correspond- ing week, 1941
Data from 86 large cities of the United States:		
Total deaths.....	8,430	8,431
Average for 3 prior years.....	8,732	
Total deaths, first 13 weeks of year.....	117,314	120,774
Deaths per 1,000 population, first 13 weeks of year, annual rate.....	12.8	13.2
Deaths under 1 year of age.....	510	464
Average for 3 prior years.....	491	
Deaths under 1 year of age, first 13 weeks of year.....	7,227	6,820
Data from industrial insurance companies:		
Policies in force.....	64,959,697	64,571,281
Number of death claims.....	11,809	12,661
Death claims per 1,000 policies in force, annual rate.....	9.5	10.2
Death claims per 1,000 policies, first 13 weeks of year, annual rate.....	10.3	11.0

# PREVALENCE OF DISEASE

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*No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring*

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## UNITED STATES

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### REPORTS FROM STATES FOR WEEK ENDED APRIL 11, 1942

#### Summary

Of the nine common communicable diseases listed in the following table and for which weekly figures are available for prior years, the incidence of only two—measles and meningococcus meningitis—is above the 5-year (1937-41) median.

A total of 128 cases of meningococcus meningitis was reported for the current week, which is two to three times the number reported for the corresponding week of any other year since 1937, when 139 cases were reported. The current incidence is above that for last year in each geographic area except the South Atlantic and East South Central. It is four times as high as last year in the West South Central area, and approximately three times as high in the New England and Middle Atlantic States. The largest numbers of cases were reported currently from Texas (23), New York and Pennsylvania (15 each), and Maryland (9).

Smallpox incidence continues low. It is below that for any prior year. Only 13 scattering cases of poliomyelitis were reported for the week. One case of leprosy was reported in New York and 1 case in Illinois, and 2 cases of anthrax were reported in Pennsylvania.

Of 26 cases of anthrax reported to date this year, 16 cases have occurred in Pennsylvania; of 944 cases of bacillary dysentery, Texas has reported 567 (also 49 of 212 cases of amebic dysentery); while of 515 cases of unspecified dysentery reported so far this year, Virginia reported 293 and Arizona 185.

Other current reports include 2 cases of Rocky Mountain spotted fever (in the western States) and 27 cases of endemic typhus fever (9 in Texas, 7 in Louisiana, and 5 in Georgia).

The crude death rate for the current week for 88 large cities in the United States is 12.1 per 1,000 population, as compared with 12.0 for the preceding week. The current rate is the same as the 3-year (1939-41) average. For only 3 weeks of the current year has the weekly death rate in this group of large cities been above the 3-year average.

*Telegraphic morbidity reports from State health officers for the week ended April 11, 1942, and comparison with corresponding week of 1941 and 5-year median*

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Med- ian 1937- 41	Week ended		Med- ian 1937- 41	Week ended		Med- ian 1937- 41	Week ended		Med- ian 1937- 41
	Apr. 11, 1942	Apr. 12, 1941		Apr. 11, 1942	Apr. 12, 1941		Apr. 11, 1942	Apr. 12, 1941		Apr. 11, 1942	Apr. 12, 1941	
NEW ENG.												
Maine	0	0	1	1	2	3	208	56	56	1	1	
New Hampshire	0	0	0		2		15	58	58	0	0	
Vermont	0	0	0				56	18	18	0	0	
Massachusetts	3	3	3				1,158	921	736	5	2	0
Rhode Island	0	0	0				358	3	30	1	0	0
Connecticut	0	3	3	3		5	656	228	228	6	2	2
MID. ATL.												
New York	10	19	19	10	18	18	633	7,601	1,563	15	5	5
New Jersey	4	4	7	11	9	10	907	2,299	1,577	8	2	0
Pennsylvania	10	18	28				1,068	5,316	661	15	6	6
E. NO. CEN.												
Ohio	5	6	12	8	14	14	376	8,945	270	0	1	1
Indiana	6	13	13	45	7	24	134	1,301	137	2	0	0
Illinois	17	13	22	7	30	30	758	3,854	92	6	0	1
Michigan	3	2	10	21	8	8	279	4,745	464	0	0	0
Wisconsin	4	1	1	42	89	89	731	1,622	657	0	1	1
W. NO. CEN.												
Minnesota	2	0	2	2	1	1	937	10	178	0	1	1
Iowa	14	3	3	1	84	9	221	309	231	0	1	0
Missouri	3	3	17	1	2	11	268	274	71	1	0	1
North Dakota	2	1	1	3	7	28	30	7	10	1	0	0
South Dakota	4	0	0				4	2	2	0	0	0
Nebraska	6	0	1	28			305	17	24	0	0	0
Kansas	3	2	4	13	6	6	532	1,328	513	1	0	1
SO. ATL.												
Delaware	0	0	0	1			8	282	25	0	0	0
Maryland	2	1	1	14	14	12	792	215	215	9	3	1
Dist. of Col.	1	3	3	3	1	1	134	341	116	0	0	0
Virginia	7	3	13	378	229	229	182	1,862	438	4	2	2
West Virginia	5	6	8	24	9	59	184	678	21	1	2	3
North Carolina	9	6	13	18	54	34	825	1,776	810	2	4	2
South Carolina	6	10	3	402	408	442	200	804	39	3	0	0
Georgia	3	7	7	73	92	94	161	787	194	1	1	1
Florida	1	5	7	11	185	7	283	1,099	160	0	0	0
E. SO. CEN.												
Kentucky	6	4	7	4	4	10	87	1,784	448	3	0	0
Tennessee	5	4	5	48	87	96	129	647	145	1	2	3
Alabama	5	8	9	103	119	142	213	639	169	3	1	4
Mississippi	4	4	4							1	8	1
W. SO. CEN.												
Arkansas	4	8	7	83	168	99	152	390	47	1	0	0
Louisiana	5	5	7	4	20	20	354	167	7	1	0	1
Oklahoma	5	6	6	68	58	115	359	136	112	2	0	1
Texas	37	37	30	726	933	792	2,457	2,197	668	23	2	2
MOUNTAIN												
Montana	3	1	0	8	1	11	76	74	39	0	0	0
Idaho	0	0	1		1	5	52	4	15	0	0	0
Wyoming	0	0	1	116			72	58	46	1	0	0
Colorado	6	12	12	72	19	19	245	375	166	1	1	0
New Mexico	3	1	1	5	6	4	84	260	81	0	0	0
Arizona	1	4	2	125	101	93	189	53	53	1	0	0
Utah	0	0	0	26	0	6	286	21	102	0	0	0
Nevada	0	0					0	0		0	0	
PACIFIC												
Washington	2	1	1	0	3		354	110	110	3	0	1
Oregon	0	3	3	16	10	34	156	354	54	0	0	0
California	9	13	21	499	304	186	6,341	340	455	5	1	2
Total	225	243	341	3,034	3,111	3,111	24,009	54,367	13,447	128	49	49
14 weeks	4,262	4,069	6,907	64,560	466,836	145,653	228,958	430,178	181,278	1,081	711	719

See footnotes at end of table.

*Telegraphic morbidity reports from State health officers for the week ended April 11, 1942, and comparison with corresponding week of 1941 and 5-year median—Con.*

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median 1937-41	Week ended		Median 1937-41	Week ended		Median 1937-41	Week ended		Median 1937-41
	Apr. 11, 1942	Apr. 12, 1941		Apr. 11, 1942	Apr. 12, 1941		Apr. 11, 1942	Apr. 12, 1941		Apr. 11, 1942	Apr. 12, 1941	
NEW ENG.												
Maine.....	0	0	0	8	15	15	0	0	0	1	1	2
New Hampshire.....	0	0	0	10	5	7	0	0	0	0	1	0
Vermont.....	0	0	0	13	25	12	0	0	0	0	0	0
Massachusetts.....	1	0	0	351	206	206	0	0	0	3	0	0
Rhode Island.....	0	0	0	8	5	12	0	0	0	0	0	0
Connecticut.....	0	0	0	31	64	97	0	0	0	1	3	1
MID. ATL.												
New York.....	2	1	2	482	727	898	0	0	0	10	4	5
New Jersey.....	0	0	0	202	220	174	0	0	0	2	1	3
Pennsylvania.....	2	0	0	421	420	482	0	0	0	7	6	7
E. NO. CEN.												
Ohio.....	0	0	0	324	296	296	1	1	3	3	0	4
Indiana.....	0	0	0	103	137	162	1	0	9	0	0	0
Illinois.....	0	0	0	233	426	527	0	3	6	0	2	2
Michigan <sup>1</sup> .....	0	0	0	227	306	413	1	0	9	0	4	3
Wisconsin.....	0	1	0	142	116	139	0	3	3	1	1	1
W. NO. CEN.												
Minnesota.....	0	0	0	80	48	51	0	0	5	0	0	0
Iowa.....	0	1	0	73	53	115	2	3	40	1	1	1
Missouri.....	0	0	0	56	109	109	1	6	23	1	0	1
North Dakota.....	0	0	0	23	4	12	0	0	1	4	0	0
South Dakota.....	0	0	0	38	13	17	0	0	5	0	0	0
Nebraska.....	0	0	0	31	26	26	0	0	5	0	0	0
Kansas.....	0	1	0	109	41	78	0	1	2	0	0	1
SO. ATL.												
Delaware.....	0	0	0	37	19	5	0	0	0	0	0	0
Maryland <sup>1</sup> .....	0	1	0	82	25	35	0	0	0	2	1	1
Dist. of Col.....	0	0	0	12	18	18	0	0	0	0	3	1
Virginia.....	1	0	0	34	32	33	0	0	0	2	1	3
West Virginia.....	1	1	1	32	38	49	0	2	0	0	10	2
North Carolina.....	0	1	0	14	21	28	0	2	0	1	8	2
South Carolina.....	0	0	0	1	6	6	0	1	0	0	3	2
Georgia.....	0	0	0	16	15	12	0	0	0	2	3	3
Florida.....	1	6	0	7	2	7	0	0	0	14	2	2
E. SO. CEN.												
Kentucky.....	0	1	0	90	167	72	1	0	1	5	3	3
Tennessee.....	0	1	1	68	104	58	0	0	0	1	0	3
Alabama.....	0	0	0	18	11	11	0	0	0	0	1	3
Mississippi <sup>2</sup> .....	0	0	1	13	10	7	1	0	1	1	1	1
W. SO. CEN.												
Arkansas.....	0	0	0	5	8	8	5	6	3	0	0	3
Louisiana.....	0	0	0	8	5	7	2	1	1	3	0	9
Oklahoma.....	0	0	0	13	10	22	0	0	3	2	0	1
Texas.....	3	2	0	41	50	60	3	0	5	5	4	9
MOUNTAIN												
Montana.....	0	0	0	5	41	17	0	0	0	1	0	1
Idaho.....	0	0	0	19	3	16	0	0	1	0	0	0
Wyoming.....	0	0	0	12	12	16	0	0	0	0	0	0
Colorado.....	1	0	0	46	26	34	0	0	3	0	0	0
New Mexico.....	1	1	0	4	8	15	0	0	0	0	0	1
Arizona.....	0	0	0	4	7	8	0	0	0	0	0	1
Utah <sup>1</sup> .....	0	0	0	22	7	18	0	0	0	0	1	0
Nevada.....	0	0	0	0	4	0	0	0	0	0	0	0
PACIFIC												
Washington.....	0	0	0	65	14	37	0	0	4	1	3	0
Oregon.....	0	0	0	6	13	30	2	2	6	0	2	1
California.....	0	0	1	76	124	182	0	0	9	3	2	2
Total.....	13	18	17	3,720	4,062	4,995	20	31	213	77	72	108
14 weeks.....	312	334	294	55,893	53,109	73,326	321	633	4,333	1,043	1,061	1,514

See footnotes at end of table.

*Telegraphic morbidity reports from State health officers for the week ended April 11, 1942—Continued*

Division and State	Whooping cough		Week ended Apr. 11, 1942									
	Week ended		An- thrax	Dysentery			En- ceph- alitis	Lep- rosy	Rocky Mt. spotted fever	Tul- la- remia	Ty- phus fever	
	Apr. 11, 1942	Apr. 12, 1941		Ame- bic	Bacil- lary	Un- spec- ified						
NEW ENG.												
Maine.....	6	43	0	0	0	0	0	0	0	0	0	0
New Hampshire.....	7	4	0	0	0	0	0	0	0	0	0	0
Vermont.....	40	9	0	0	0	0	0	0	0	0	0	0
Massachusetts.....	188	158	0	0	1	0	0	0	0	0	0	0
Rhode Island.....	48	21	0	0	0	0	0	0	0	0	0	0
Connecticut.....	89	40	0	0	1	0	0	0	0	0	0	0
MID. ATL.												
New York.....	419	283	0	2	2	0	1	1	0	0	0	1
New Jersey.....	314	69	0	0	0	0	1	0	0	0	0	0
Pennsylvania.....	231	348	2	1	0	0	1	0	0	0	0	0
E. NO. CEN.												
Ohio.....	143	426	0	0	0	0	0	0	0	0	0	0
Indiana.....	32	23	0	0	0	0	0	0	0	0	0	0
Illinois.....	194	76	0	2	0	0	1	1	0	0	0	0
Michigan <sup>1</sup> .....	176	330	0	0	1	0	0	0	0	0	0	0
Wisconsin.....	132	88	0	0	0	0	0	0	0	1	0	0
W. NO. CEN.												
Minnesota.....	45	83	0	0	0	0	0	0	0	0	0	0
Iowa.....	11	65	0	0	0	0	0	0	0	0	0	0
Missouri.....	13	40	0	0	0	0	0	0	0	0	0	0
North Dakota.....	13	25	0	0	0	0	0	0	0	0	0	0
South Dakota.....	0	30	0	0	0	0	0	0	0	0	0	0
Nebraska.....	7	30	0	0	0	0	0	0	0	0	0	0
Kansas.....	34	115	0	0	0	0	1	0	0	2	0	0
SO. ATL.												
Delaware.....	0	4	0	0	0	0	0	0	0	0	0	0
Maryland <sup>2</sup> .....	25	64	0	0	0	0	1	0	0	0	0	0
Dist. of Col.....	14	18	0	0	0	0	0	0	0	0	0	0
Virginia.....	48	148	0	1	0	19	0	0	0	1	0	0
West Virginia.....	20	46	0	0	0	0	0	0	0	0	0	0
North Carolina.....	96	312	0	0	0	0	0	0	0	0	0	0
South Carolina.....	55	129	0	0	0	0	0	0	0	0	0	0
Georgia.....	28	61	0	1	2	0	0	0	0	1	5	0
Florida.....	13	13	0	2	0	0	0	0	0	0	1	0
E. SO. CEN.												
Kentucky.....	59	40	0	1	0	0	1	0	0	0	0	0
Tennessee.....	41	48	0	0	0	0	1	0	0	2	0	0
Alabama.....	20	48	0	0	0	0	0	0	0	1	3	0
Mississippi <sup>3</sup> .....			0	0	0	0	0	0	0	1	0	0
W. SO. CEN.												
Arkansas.....	8	12	0	1	0	0	0	0	0	0	1	7
Louisiana.....	11	9	0	0	10	0	0	0	0	0	0	0
Oklahoma.....	8	25	0	0	0	0	0	0	0	0	0	0
Texas.....	188	337	0	4	20	0	0	0	0	1	9	0
MOUNTAIN												
Montana.....	11	24	0	1	0	0	0	0	1	0	0	0
Idaho.....	0	17	0	0	0	0	0	0	0	0	0	0
Wyoming.....	8	0	0	0	0	0	0	0	0	0	0	0
Colorado.....	47	108	0	0	0	0	0	0	0	0	0	0
New Mexico.....	45	29	0	0	0	0	0	0	0	0	0	0
Arizona.....	46	21	0	0	0	25	1	0	0	0	0	0
Utah <sup>2</sup> .....	32	69	0	0	0	0	0	0	0	0	0	0
Nevada.....	12	4	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington.....	96	63	0	0	0	0	0	0	0	0	0	0
Oregon.....	34	19	0	0	0	0	0	0	1	0	0	0
California.....	286	445	0	0	0	0	2	0	0	0	0	0
Total.....	3,393	4,419	2	16	37	44	11	2	2	11	27	0
14 weeks.....	54,101	61,840										

<sup>1</sup>New York City only.<sup>2</sup>Period ended earlier than Saturday.<sup>3</sup>Correction: Week ended Mar. 28, 1942, Measles, New Mexico, 130 cases.



## WEEKLY REPORTS FROM CITIES

City reports for week ended March 28, 1942

This table lists the reports from 90 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

	Diphtheria cases	Enecephalitis, infectious, cases		Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Pollomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
		Cases	Deaths	Cases	Deaths								
Atlanta, Ga.	0	0	11	2	2	2	1	8	0	0	0	0	1
Baltimore, Md.	0	0	4	0	441	6	23	0	35	0	0	0	32
Barre, Vt.	0	0	0	0	0	0	0	0	0	0	0	0	2
Billings, Mont.	0	0	0	0	0	0	1	0	1	0	0	0	0
Birmingham, Ala.	1	0	8	2	7	0	6	0	4	0	0	0	14
Boise, Idaho	0	0	0	0	0	0	0	0	0	0	0	0	0
Boston, Mass.	0	0	0	0	170	4	15	0	87	0	1	62	0
Bridgeport, Conn.	0	0	0	0	14	1	3	0	3	0	0	0	3
Brunswick, Ga.	0	0	0	0	10	0	0	0	0	0	0	0	0
Buffalo, N. Y.	0	0	0	0	19	1	10	0	15	0	0	0	3
Camden, N. J.	1	0	0	0	10	0	1	0	12	0	0	0	2
Charleston, S. C.	0	0	12	1	2	0	0	0	0	0	0	0	7
Charleston, W. Va.	0	0	3	0	0	0	0	0	0	0	0	0	5
Chicago, Ill.	10	0	7	1	108	0	32	0	89	0	0	0	100
Cincinnati, Ohio	0	0	2	4	3	1	7	0	21	0	0	0	12
Cleveland, Ohio	2	0	4	0	4	0	13	1	87	0	0	0	17
Columbus, Ohio	0	0	3	3	11	0	3	0	5	0	0	0	0
Concord, N. H.	0	0	0	0	0	0	0	0	1	0	0	0	0
Cumberland, Md.	0	0	0	0	1	0	0	0	1	0	0	0	0
Dallas, Tex.	1	0	0	0	286	0	1	0	4	0	0	0	5
Denver, Colo.	4	0	21	0	115	0	2	0	1	0	0	0	14
Detroit, Mich.	2	0	1	0	60	0	24	0	129	0	0	0	65
Duluth, Minn.	0	0	0	0	2	0	1	0	9	0	0	0	6
Fall River, Mass.	1	0	0	0	20	0	2	0	51	0	0	0	0
Fargo, N. Dak.	0	0	0	0	1	0	0	0	2	0	0	0	3
Flint, Mich.	0	0	0	0	6	0	4	0	13	0	0	0	0
Fort Wayne, Ind.	0	0	0	0	1	0	1	0	2	0	0	0	1
Frederick, Md.	0	0	0	0	20	0	1	0	0	0	0	0	1
Galveston, Tex.	0	0	0	0	1	0	1	0	1	0	0	0	0
Grand Rapids, Mich.	1	0	0	0	5	0	2	0	6	0	0	0	2
Great Falls, Mont.	0	0	0	0	19	0	0	0	0	0	0	0	2
Hartford, Conn.	0	0	0	0	40	0	0	0	0	0	0	0	2
Helena, Mont.	0	0	0	0	2	0	0	0	0	0	0	0	0
Houston, Tex.	1	0	0	0	51	0	11	0	1	0	1	1	1
Indianapolis, Ind.	4	0	1	49	0	14	0	23	0	0	0	21	0
Kansas City, Mo.	1	0	2	65	0	5	0	44	0	0	0	4	0
Kenosha, Wis.	0	0	0	7	0	0	0	2	0	0	0	10	0
Little Rock, Ark.	0	0	8	0	47	0	4	0	0	0	0	0	0
Los Angeles, Calif.	3	0	22	0	643	1	20	0	23	0	0	29	0
Lynchburg, Va.	0	0	0	2	0	2	0	2	0	2	0	0	8
Memphis, Tenn.	0	0	3	15	0	6	0	4	1	1	6	0	0
Milwaukee, Wis.	0	0	1	127	0	12	0	34	0	0	46	0	0
Minneapolis, Minn.	3	0	1	255	0	6	0	15	0	0	9	0	0
Missoula, Mont.	0	0	0	0	0	1	0	4	0	0	0	0	0
Mobile, Ala.	0	0	3	1	4	0	2	0	2	0	0	0	0
Nashville, Tenn.	0	0	1	0	0	6	0	2	0	0	7	0	0
Newark, N. J.	0	0	9	0	134	1	5	1	29	0	40	0	0
New Haven, Conn.	0	0	0	215	0	2	0	1	0	0	1	0	0
New Orleans, La.	2	0	0	64	1	6	0	2	0	2	0	0	0
New York, N. Y.	30	0	11	2	53	16	86	2	337	0	2	240	0
Omaha, Nebr.	1	0	0	137	0	3	0	4	0	0	0	0	0
Philadelphia, Pa.	1	0	4	3	29	3	36	0	333	0	0	53	0
Pittsburgh, Pa.	3	0	1	19	2	15	0	11	0	0	8	0	0
Portland Maine.	0	0	0	4	1	6	0	5	0	0	0	0	0
Providence, R. I.	1	0	0	179	1	3	0	12	0	0	41	0	0

## City reports for week ended March 28, 1942—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Pollomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Pueblo, Colo.	0	0	0	0	12	0	0	0	5	0	0	0
Racine, Wis.	0	0	0	0	13	0	0	0	1	0	0	13
Raleigh, N. C.	0	0	0	0	6	1	6	0	0	0	0	6
Reading, Pa.	0	0	1	1	0	3	3	0	0	0	0	6
Richmond, Va.	0	0	7	1	2	0	3	0	3	0	0	1
Roanoke, Va.	0	0	0	0	0	0	0	0	0	0	0	0
Rochester, N. Y.	0	0	0	0	16	0	4	0	6	0	0	4
Sacramento, Calif.	1	0	0	0	97	0	4	0	0	0	0	23
Saint Joseph, Mo.	1	0	0	0	6	0	2	0	3	0	0	0
Saint Louis, Mo.	0	0	1	1	253	0	10	0	29	0	0	6
Saint Paul, Minn.	0	0	0	0	360	0	4	0	7	0	0	12
Salt Lake City, Utah.	0	0	0	0	17	0	3	0	3	0	0	7
San Antonio, Tex.	0	0	6	2	27	0	9	0	3	0	0	0
San Francisco, Calif.	2	1	3	0	306	3	9	0	15	0	1	18
Savannah, Ga.	0	0	8	1	12	0	1	0	0	0	0	0
Seattle, Wash.	0	0	0	2	13	1	3	0	2	0	0	18
Shreveport, La.	1	0	0	0	10	0	2	0	0	0	0	0
South Bend, Ind.	0	0	0	0	1	0	0	0	24	0	0	2
Spokane, Wash.	0	0	0	0	6	0	6	0	3	0	0	6
Springfield, Ill.	0	1	0	0	311	0	4	0	5	0	0	0
Springfield, Mass.	0	0	0	0	44	2	1	0	15	0	0	10
Superior, Wis.	0	0	0	0	1	0	0	0	2	0	0	2
Syracuse, N. Y.	0	0	0	0	41	0	4	0	3	0	0	33
Tacoma, Wash.	0	0	0	1	0	0	3	0	1	0	0	2
Tampa, Fla.	0	0	0	0	10	0	2	0	0	0	5	0
Terre Haute, Ind.	0	0	0	0	0	0	2	0	0	0	0	0
Topeka, Kans.	0	0	0	0	6	0	0	0	1	0	0	3
Trenton, N. J.	0	0	1	0	2	0	3	0	10	0	0	6
Washington, D. C.	0	0	4	4	88	2	20	0	13	0	0	19
Wheeling, W. Va.	0	0	0	0	15	0	0	0	1	0	0	0
Wichita, Kans.	0	0	3	2	32	1	5	0	8	0	0	5
Wilmington, Del.	0	0	0	0	4	0	4	0	3	0	0	3
Wilmington, N. C.	0	0	0	0	51	0	3	0	0	0	0	0
Winston-Salem, N. C.	0	0	0	0	37	0	2	0	3	0	0	0
Worcester, Mass.	0	0	0	0	12	0	10	0	14	0	0	49

*Anthrax*.—Cases: Philadelphia, 1.

*Dysentery, amebic*.—Cases: Chicago, 1; Los Angeles, 1; New York, 5; St. Louis, 1.

*Dysentery, bacillary*.—Cases: Los Angeles, 2; New York, 4.

*Typhus fever*.—Cases: Charleston, S. C., 1; New Orleans, 8; New York, 1; Savannah, 1.

Rates (annual basis) per 100,000 population for a group of 90 selected cities (population, 1942, 34,091,818)

Period	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Typhoid fever cases	Whooping cough cases
		Cases	Deaths						
Week ended Mar. 28, 1942.	11.93	25.54	6.88	809.25	83.20	252.67	0.15	1.99	174.09
Average for week 1937-41.	15.90	67.00	12.66	1327.56	104.83	291.48	3.24	2.93	*183.41

## FOREIGN REPORTS

### CANADA

*Provinces—Communicable diseases—Week ended March 14, 1942.*—During the week ended March 14, 1942, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		3	3	10	11	1			5	33
Chickenpox	1	29		189	372	52	35	21	125	824
Diphtheria	2	19		19	1	4		2	7	54
Dysentery				3					1	4
German measles		5	1	27	65	8	12	20	35	173
Influenza		44			14				48	106
Measles		5	3	663	239	236	18	8	20	1,192
Mumps		17	7	467	478	171	215	109	603	2,067
Pneumonia	1	16			11	4			11	43
Poliomyelitis			1			1				2
Scarlet fever	4	21	18	110	342	50	33	92	27	697
Tuberculosis		16	8	174	80		4	2		254
Typhoid and paratyphoid fever			1	7	1					9
Undulant fever					1					1
Whooping cough	4	20		144	67	9	15	2	47	300
Other communicable diseases	1	15		2	218	43	6		8	293

### FINLAND

*Communicable diseases—December 1941.*—During the month of December 1941, cases of certain communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	167	Poliomyelitis	2
Influenza	1,572	Scarlet fever	218
Paratyphoid fever	83	Typhoid fever	71

**REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND  
YELLOW FEVER RECEIVED DURING THE CURRENT WEEK**

NOTE.—Except in cases of unusual prevalence, only those places are included which had not previously reported any of the above-named diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A cumulative table showing the reported prevalence of these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday of each month.

**Plague**

*Argentina—Cordoba Province.*—Plague has been reported in Cordoba Province, Argentina, as follows: January 1–31, 1942, 2 cases, 1 death; February 1–28, 5 cases, 4 deaths.

*Indochina (French)—Laos.*—During the period March 11–20, 1942, 13 cases of plague were reported in Laos, French Indochina.

*Morocco.*—During the week ended March 21, 1942, 41 cases of plague were reported in Morocco. For the week ended March 14, 1942, 11 cases were reported.

**Typhus Fever**

*Morocco.*—During the week ended March 21, 1942, 1,280 cases of typhus fever were reported in Morocco.

*Rumania.*—During the week ended March 28, 1942, 200 cases of typhus fever were reported in Rumania. During the preceding week 171 cases were reported.

*Spain.*—For the week ended March 7, 1942, 230 cases of typhus fever were reported in Spain (69 cases in Madrid, and 75 cases in Barcelona).

*Tunisia.*—Typhus fever has been reported in Tunisia as follows: Week ended February 28, 1942, 663 cases (75 cases in Tunis and 16 in Sfax); week ended March 7, 874 cases (83 in Tunis); week ended March 14, 582 cases (59 in Tunis); week ended March 21, 811 cases (75 in Tunis).

**Yellow Fever**

*Sierra Leone—Freetown (vicinity of).*—On February 9, 1942, 1 case of yellow fever with 1 death was reported in the vicinity of Freetown, Sierra Leone.